

THIRD SERIES VOL 62 NUMBER 2

DECEMBER 1954

# THE JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

66 PORTLAND PLACE LONDON W1 · TWO SHILLINGS AND SIXPENCE



Piazza Navona, Rome. From a fountain-pen sketch by Charles Hobbis [A]



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# THE JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

THIRD SERIES VOLUME SIXTY-TWO NUMBER TWO  
66 PORTLAND PLACE LONDON W1 TELEPHONE LANGHAM 5721-7

TWO SHILLINGS AND SIXPENCE  
TELEGRAMS: RIBAZO WESDO LONDON

DECEMBER 1954

45 Editorial	62 Mural Painting in the N.A.A.F.I. Club, Chippenham	73 Book Reviews
47 A House at Hilversum	63 New Printing Works for the Bank of England at Debden, Essex	76 Review of Construction and Materials
50 An Introduction to Two Manchester Architects. Edgar Wood and James Henry Sellers—J. H. G. Archer	66 The House and Housework—R. G. Bateson, K. J. Noble and J. J. Attenburrow	78 Notes and Notices
54 R.I.B.A. Conference on the Design of Health Buildings—Discussion Part II	72 Practice Notes	80 Notes from the Minutes of the Council
61 Correspondence		80 Membership Lists
		83 Obituaries
		84 Members' Column

## New Honorary Members of the R.I.B.A.

The Right Hon. Sir David Eccles, K.C.V.O., M.P., lately Minister of Works, now Minister of Education, has accepted the Council's nomination for election as an Honorary Fellow.

The following have accepted nomination as Honorary Associates: Mr. Howard M. Colvin, M.A., Fellow and Librarian of St. John's College, Oxford; he is the author of *The Biographical Dictionary of English Architects, 1660-1840*; Mr. Henry Morris, M.A., Director of Education for Cambridgeshire; he is the founder of the Village College scheme and is Adviser to the Ministry of Housing and Local Government on Educational Matters for the New Towns; Mr. Robert W. Pilot, M.B.E., D.C.L.; he is President of the Royal Canadian Academy of Arts; his name was submitted by the Royal Architectural Institute of Canada.

## President of the Royal Academy

The election of an architect, Professor A. E. Richardson, M.A.(Cantab.), F.S.A. [F], as President of the Royal Academy will be warmly welcomed by the profession. There have been only four architect presidents in the long history of the Royal Academy.

## Forthcoming Exhibitions at the R.I.B.A.

An exhibition entitled *German Architecture To-day* is to be shown at the R.I.B.A. from 25 February to 24 March 1955. It is being prepared by the Bund Deutscher Architekten and is sponsored by the Bonn Government. The exhibition is divided into sections dealing with the following types of building: Business, Industrial, Official, Exhibitions, Private Houses, Public Housing, Schools, Churches, Cultural Buildings, Sports Buildings and Gardens. A special section will illustrate the work of the pioneers of the modern movement in Germany.

In April an exhibition of Mexican contemporary architecture is to be shown. It is being designed and the material selected by the Society of Mexican Architects and is sponsored by the Mexican Government and the National College of Architects. The exhibition will be brought to London by the Mexican Embassy.

## Modular Coordination

The studies under way at the B.S.I. and the B.R.S. on this subject require information on the dimensions used by architects for the planning, reference, or structural grids used in 1954 on the building types in their offices. It would be much appreciated if architects would send this information direct to: Modular Coordination Studies, British Standards Institution, 2, Park Street, London, W.1.

Architects are specially asked to submit information under the headings Building Type, Grid Dimensions, Remarks, in three parallel vertical columns of equal width.

## R.I.B.A. Reception 1955

The Royal Institute is to hold its Annual Reception on Friday 20 May from 8.15 to midnight. There is no restriction on the number of tickets members may take but they are urged to make their applications for tickets, which are 15s. each, not later than 31 March as the list may have to be closed if there is an unusually large demand.

## R.I.B.A. Conference on the Design of Health Buildings

The Report of the Discussions at the recent Conference on the Design of Health Buildings, which has been published in this and the previous JOURNAL, has been reprinted as a separate pamphlet. Copies are being sent free of charge to those who took tickets for the Conference. Additional copies are available at 1s. each. Copies of the pamphlet containing the four papers discussed at the Conference may also be obtained at 1s. each; copies of both pamphlets at 1s. 6d. each. Applications should be made to the Secretary R.I.B.A.

## The Brixton School of Building

The Minister of Works, Mr. Nigel Birch, O.B.E., M.P., opened on 11 November at the Building Centre an exhibition arranged as part of the celebrations marking the 50th anniversary of the founding of the L.C.C. Brixton School of Building. Mr. Victor Mishcon, Chairman of the L.C.C., presided at the ceremony.

After the Minister had declared the exhibition open he presented two prizes of £25 each awarded to students by the Building Centre. The prize for students of architecture was awarded to Mr. J. D. Gardner, who proposes to visit Italy, and that for students of building to Mr. D. Shears, who will study mechanisation as applied to the building industry.

The exhibition was designed and presented by the staff and students of the school, the displays being arranged to indicate the work of the school and the general conditions of the industry during three periods; 1904 to 1919, 1919 to 1939, and 1939 to 1954, each period being illustrated by photographs of typical buildings. Exhibits of students' drawings and notebooks showed the kind of work that building education comprised during the first period, and to illustrate the two succeeding periods there was material recounting the technical and organisational developments in the industry and the changes those developments brought about in the college. The founding of B.R.S. in 1920 was referred to as exercising an important influence on building education.

Interesting exhibits were the case histories of one or two students, showing the hours they worked and the wages they earned and, as their knowledge and ability raised them to higher positions, the salaries they received.

### R.I.B.A. Symposium on High Flats

The Royal Institute are to hold a whole day symposium on the subject of high blocks of flats on Tuesday 15 February. It will be opened by the Rt. Hon. Duncan Sandys, M.P., Minister of Housing and Local Government. The Chairman will be Dr. J. L. Martin [F], Architect to the London County Council, and a group of authoritative speakers will introduce discussions on various aspects of the problem. The morning session, beginning at 10 a.m., will deal with questions of policy and planning; the afternoon session, lasting until about 6.30 p.m., will be devoted to construction, services and technology.

The Institute feel confident that these discussions will be helpful not only to architects, but to all who are concerned in the reconstruction of cities or in the planning and administration of new towns.

The design and construction of high blocks of flats of ten stories or more is a big and immediate problem in Britain. A few have been built, more are planned, and there is a widening acceptance of the view that they have an important role to play in meeting the housing needs of the country. Neither their economics nor their social implications, however, are yet fully understood; and few people in these islands have had an opportunity of appraising the visual effects of tall buildings in towns, particularly in housing development centres.

The lack of open spaces in central areas, the congestion of streets, high densities, the high cost of land, the encroachment of building on agricultural land, and—too often—the featureless spread of housing estates beyond the confines of their cities, are compelling a growing number of local authorities to consider the contribution that the building of high flats can make to their housing and reconstruction programmes.

Although the symposium is intended mainly for architects, invitations to attend and to take part in the discussions will be extended to a number of contractors, housing managers, planning officers and others directly concerned in the building of high flats.

Admission will be limited and by ticket only. A charge of 10s. 6d. per person will be made to cover morning coffee, buffet lunch and tea. Applications for tickets, accompanied by cheques or postal orders, should be addressed to the Secretary R.I.B.A. as soon as possible.

### York Courses in 1955

The programme of courses intended for architects, surveyors, clerks of works and builders, which is organised by the York Institute of Architectural Study, includes in 1955 a *Specialised Course on Modernisation of Obsolescent Dwellings* (13 to 20 April) and a *Specialised Course on The Care of Churches*. The former is a new course covering all aspects of the rehabilitation of houses built since the 19th century; the latter is a repeat of a most successful course held in 1953 and 1954.

The seventh *Summer School for Architectural Students* will be held from 30 July to 13 August and the *Summer School on A History of English Architecture* from 13 to 20 August. The Institute is also co-operating with the National Trust in the annual summer school for Americans (21 to 28 July) on *The Country Houses of England*. The course on *Public Park and Garden Design* will be held from 7 to 14 September and a new type of course on *Timber as a Structural Material in Building*, which will emphasise new timber techniques as well as covering traditional uses, will be held from 1 to 5 April.

All the Institute's activities are supervised by the Director, Dr. W. A. Singleton, F.S.A. [F]. Enquiries should be addressed to the Secretary, St. Anthony's Hall, York. An illustrated book of architectural essays, *Studies in Architectural History*, based on lectures given at the summer schools, has now been published by St. Anthony's Press, price 15s. post 9d. Copies can be obtained through booksellers or from the Institute.



### Presentation to Mr. L. Sylvester Sullivan [F] by the R.A.I.C.

The silver salver here illustrated has been presented by the Royal Architectural Institute of Canada to Mr. L. Sylvester Sullivan [F] as a token of appreciation on his retirement as their representative on the R.I.B.A. Council. The presentation was made recently by Mr. R. Schofield Morris [F], Past President of the R.A.I.C., when on a visit to London. The official description of the salver is 'A 9½ in. shaped round shell and piecrust border waiter, made in London in 1740 by John Tuite, of the Green Door, Litchfield Street, Newport Market.' Mr. Sylvester Sullivan had represented the R.A.I.C. for the past 14 years.

### Frog up or Frog down

Building Research Digest No. 71, which was issued with the November JOURNAL, deals with a matter which has aroused considerable discussion in the building industry during recent months. To reduce weight and increase output the makers of Fletton bricks have increased the volume of the frog. If laid frog upwards these bricks require about 12 per cent more mortar than did the old pattern.

For the ordinary run of walling which is not heavily loaded, for example in the two storey house, it seems that laying the bricks frog down gives sufficient margins of strength. For work designed in accordance with B.S. Code of Practice CP 111 all that is needed is to use a strength figure that is obtained by testing the brick frog down and unfilled instead of by the standard method. The Digest gives guidance on this and other points.

There have been objections from builders at receiving instructions from architects to lay bricks frog up after they have priced jobs for laying frog down, in the absence of precise instructions in specifications. Members are therefore advised to study Digest No. 71 with a view to specifying frog up or frog down in various classes of work.

### R.I.B.A. Diary

CHRISTMAS HOLIDAY. The R.I.B.A. Offices will be closed from 12.30 on Friday 24 December, to Wednesday morning, 29 December.

TUESDAY 4 JANUARY. 6.0 p.m. General Meeting. Announcement of Award of Prizes and Studentships. *Chandigarh: The Capital of the Punjab*—Maxwell Fry, C.B.E. [F].

TUESDAY 25 JANUARY. 6.0 p.m. Joint Meeting with the Illuminating Engineering Society. Assessors' criticism of entries submitted for the Dow Prize Competition.

WEDNESDAY 5 JANUARY—TUESDAY 1 FEBRUARY. Exhibition of Prize Drawings. Mondays—Fridays 10 a.m.—7 p.m.; Sat. 10 a.m.—5 p.m.

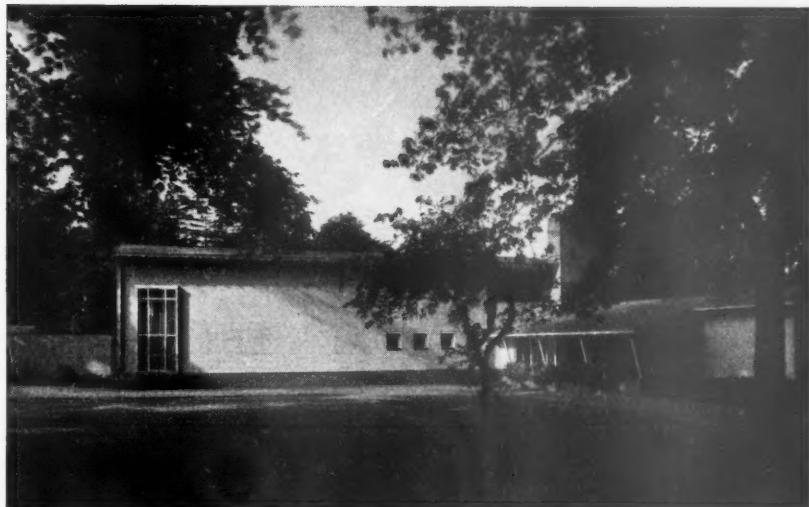
# A House at Hilversum

Architect: W. M. Dudok  
Royal Gold Medallist

THIS ELEGANT HOUSE which, though a small building, possesses all that feeling for proportion and skill in detailing which characterises Dudok's larger works, has been built for Professor de Gruyter and his wife the Princess Fatemah Khanoum of Persia. It is called *Golestan*, which means 'Garden of Roses', after a famous volume of poems by the national Persian poet Sadi who flourished in the 13th century.

Though planned for a household of three or four persons, it had to be designed for the occasional entertaining of royalty and to house the professor's library of 3,000 volumes. The clients wisely entrusted the interior decoration and furnishing to their architect.

The house stands on a well-treed corner site, quiet residential roads running along the east and south. Its composition, against a background of trees on the north, leads

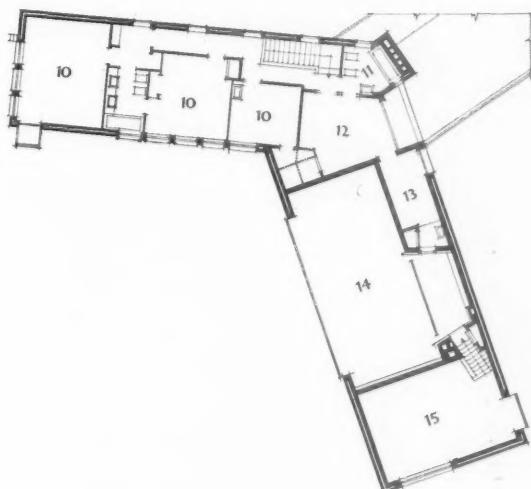
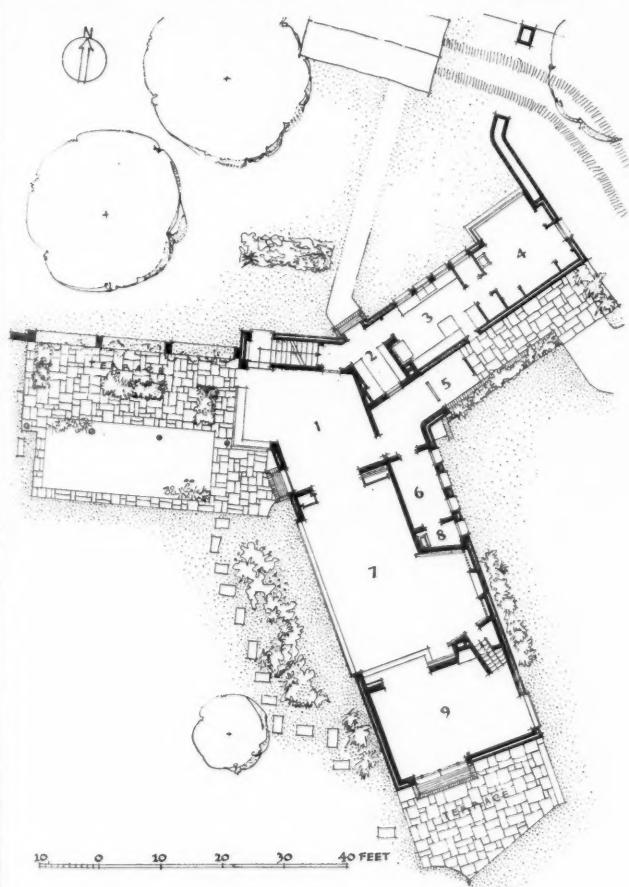


The west side of the house showing the entrance porch on the right

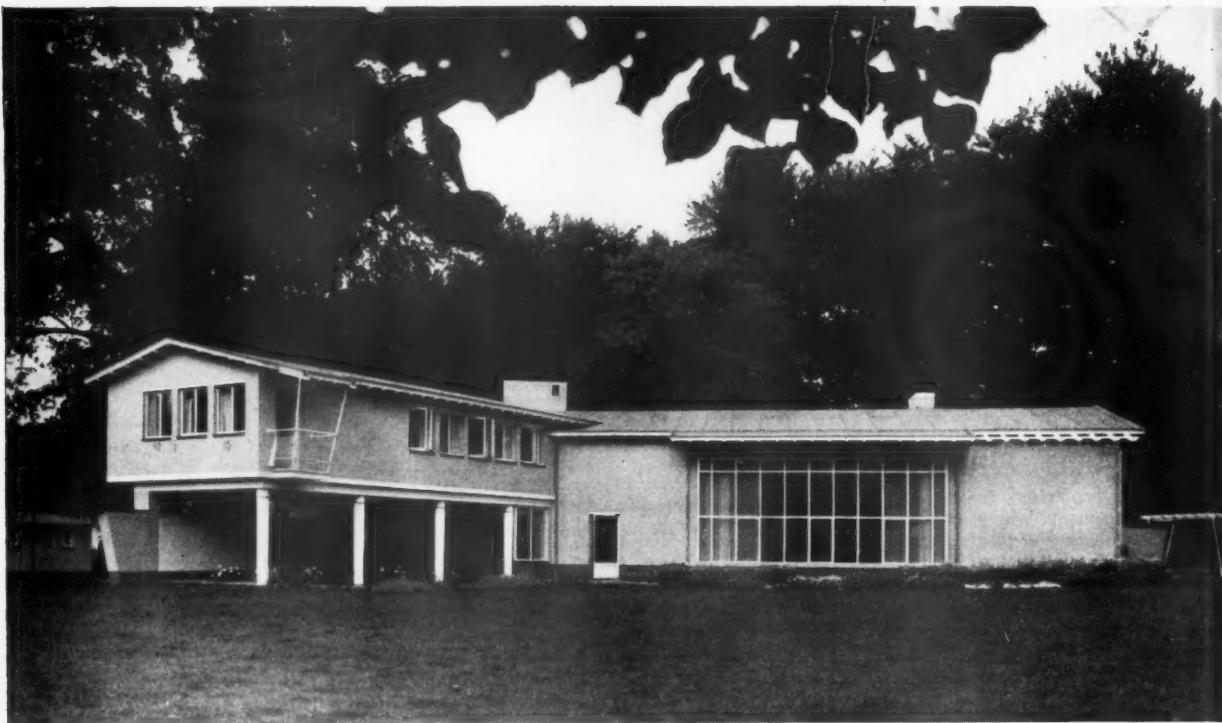
the architect visitor to walk round it and study the excellent massing and shapes from all angles. There is a precision in the forms, fenestration and detailing which calls for a lengthy inspection.

It is entered on the north-east side by a covered way which is flanked by brick flower boxes and inclined posts supporting the porch roof. The dining hall, which has a mirrored wall, is the first of the principal rooms. From it one gets an immediate view of the paved loggia with its pool against a background of undulating lawn and flower borders, a view which is reflected in the mirrored wall. To the left is the main living room, of fine proportions and extending through two storeys. A balcony over the fireplace recess has a back wall

Key to plans: Ground floor—1, dining space; 2, pantry; 3, kitchen; 4, servant's room; 5, entrance hall—dining room; 6, cloaks; 7, living room; 8, w.c.; 9, study—library. First floor—10, bedrooms; 11, w.c.; 12, spare guest chamber; 13, anteroom; 14, upper living room; 15, upper study—library



Plans of the ground and first floor.  
Lent by ARCHITECTURE AND BUILDING



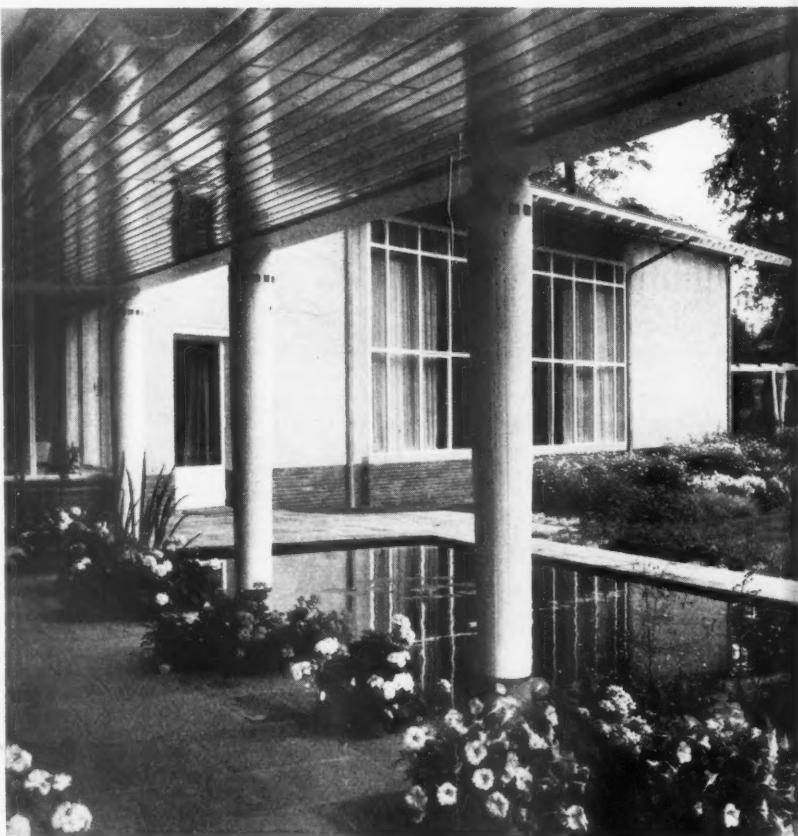
The garden side of the house. The loggia faces due south

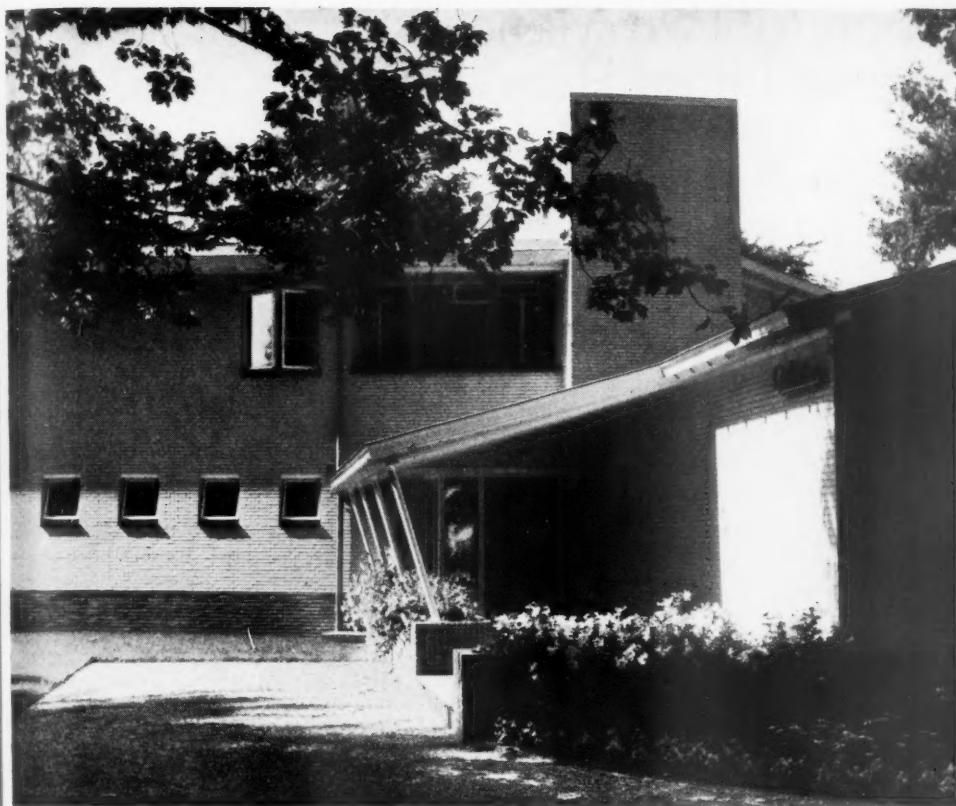
lined with bookcases. Opposite and facing west is a single large window the proportions of which are well worth study. The carpet is gold coloured and the walls a pale grey; the ceiling is dark brown, the panels being decorated alternately with the letter G and an ornamental rose. The exposed joists are cream coloured and have recesses sunk in the ends and painted dark red. The 'centrepiece' of the room is the fireplace set in marble and flanked with mahogany flush panelling. The metal balustrade is cream coloured and has a sycamore handrail and 'rope' of gilded copper. The room has a quiet dignity which is far removed from the strident exhibitionism of so many modern interiors.

The study is en suite with the living room and entered through sycamore-faced sliding doors. It is two steps up; the effect of this change in floor level is one of climax to the long view through the three rooms, an effect which is enhanced by a specially designed carpet, rose red with cream coloured roses, on a surround of parquet.

The elements composing the exterior, colourwashed brick, steel windows and a flat pitched roof of bituminous sheeting surfaced with green crushed stone, are simple but handled with great effect. The reinforced concrete columns of the loggia taper downwards into the pool and each is inset with a ring of mosaic squares.

The stone-paved loggia and pool into which the tapering reinforced concrete columns descend. Beyond is the living room window





The entrance and porch with supporting posts at right angles to the roof slope. The walls are colour-washed brickwork



The living room with the library beyond. The fireplace is set in white figured marble, flanked by mahogany panelling. The carpet is gold coloured and the ceiling panels dark brown

# An Introduction to Two Manchester Architects Edgar Wood and James Henry Sellers

By John H. G. Archer

MANCUNIAN ENTERPRISE is usually more closely associated with commerce and industry than with architecture, but half a century ago architectural practice in the city was illuminated by two enterprising and notable men, Edgar Wood and James Henry Sellers. They were contemporaries of Lethaby, Voysey, Baillie-Scott and Mackintosh, with whom they had much in common. Their work is little known, which is hardly surprising, because most of it is situated in the smaller textile towns of Lancashire and Yorkshire, like Middleton, Oldham and Huddersfield, and is found in the secluded residential parts once inhabited by wealthy cotton spinners and wool merchants.

Wood and Sellers worked in partnership for over twenty years. Their practice was domestic but included schools, churches and small offices, all of which they designed with distinction and boldness. Before the First World War they had completed a variety of buildings which are of a strikingly simple character and have reinforced concrete flat roofs, which Wood and Sellers employed to gain a greater freedom in plan.

Both partners were Lancastrians and knew intimately the industrial landscape so often depicted by L. S. Lowry. Wood was the elder of the two and was born in 1860 at Middleton, a cotton-spinning town five miles north of Manchester. His father, a wealthy mill owner, was a keen Liberal and Unitarian who intended that his son, Edgar, should enter the cotton business. He, however, like Waterhouse, was ambitious to become a painter, but was ultimately dissuaded by parental advice and instead became an architect.

Wood was articled to the Manchester partners Mills and Murgatroyd, who enjoyed a large commercial practice. They built many public buildings in Manchester, including London Road Station and the Royal Exchange, and also many warehouses. Wood disliked his years of pupilage, and soon after passing the Final Examination and being elected as an Associate in 1885 he opened his own practice and quickly established himself.

Wood was a 'character' whose individuality was conspicuously displayed by an eccentric and flamboyant taste in dress. He wore a voluminous black cloak lined with red silk, a broad-brimmed hat and carried a silver-handled cane; and he had a dachshund which he called 'Lily Lies Low'. He was no effete dandy but a man of great vehemence, determination and prodigious energy. Besides running his practice and supervising his buildings with the help of only one assistant, Wood ardently supported the Arts and Crafts movement by founding a guild in Manchester and

working in several crafts himself. He travelled widely, painted and sketched, and measured countless buildings. Even as a septuagenarian his energy was undiminished and his restless activity unabated.

Wood's mercurial temperament and peculiar individuality conform to no trite pattern. Above all he was independent and a trenchant critic of those who put their business or profession before their architecture. He was impatient of conventions and determined to gain his own way, although a keen sense of justice and honesty curbed self-will. He was a man of imagination and feeling rather than consistent logic, but he was shrewd and acute, and as vigorous mentally as physically. His creative power is reflected in the variety of his work and in the continuous development of his style, from the more orthodox Victorian designs of his early days, built in harsh, lobster-red Accrington bricks, through the fashions of Arts and Crafts and Art Nouveau, to the bold experimental designs he produced with Sellers. Wood's architecture reflects the man. It is full of contrasts, paradox and surprising detail, although it is basically well considered and planned. Sometimes it is sentimental and arbitrary but it is always bold and original and is never dull.

All of Wood's work in the 1890's reflects the influence of Morris, Webb and the Arts and Crafts movement. In his houses the rooms are arranged practically and conveniently, and the choice of materials and construction shows that Wood made a close study of local materials and traditional crafts. Sellers dubbed Wood's early work 'the Lancashire farmhouse style'. A typical Wood house in this style has a heavy, steeply-pitched stone slate roof, rough in texture and dark brown in colour; it may be hipped or gabled or a combination of the two. The brick walls are substantial and are of a mottled rose and white common brick. They may be decorated with diamond patterns in projecting headers and frequently the upper half of the walls is rendered and painted white. The corners are buttressed, and they and the doors and windows have yellow-grey sandstone dressings. The leaded-light windows are set in stone mullions, unless the client succeeded in persuading Wood that through an imminent danger of bankruptcy he could not afford to spend an extra penny, in which case the windows are set in timber frames. The front door, set in a huge stone-roofed porch, is massive, painted white and hung upon long decorative hinges, designed with mediaeval fantasy, and the letter box is of great girth.

A York stone flagged path, cobbled on either side, leads to the porch, and the garden is carefully related to the house.

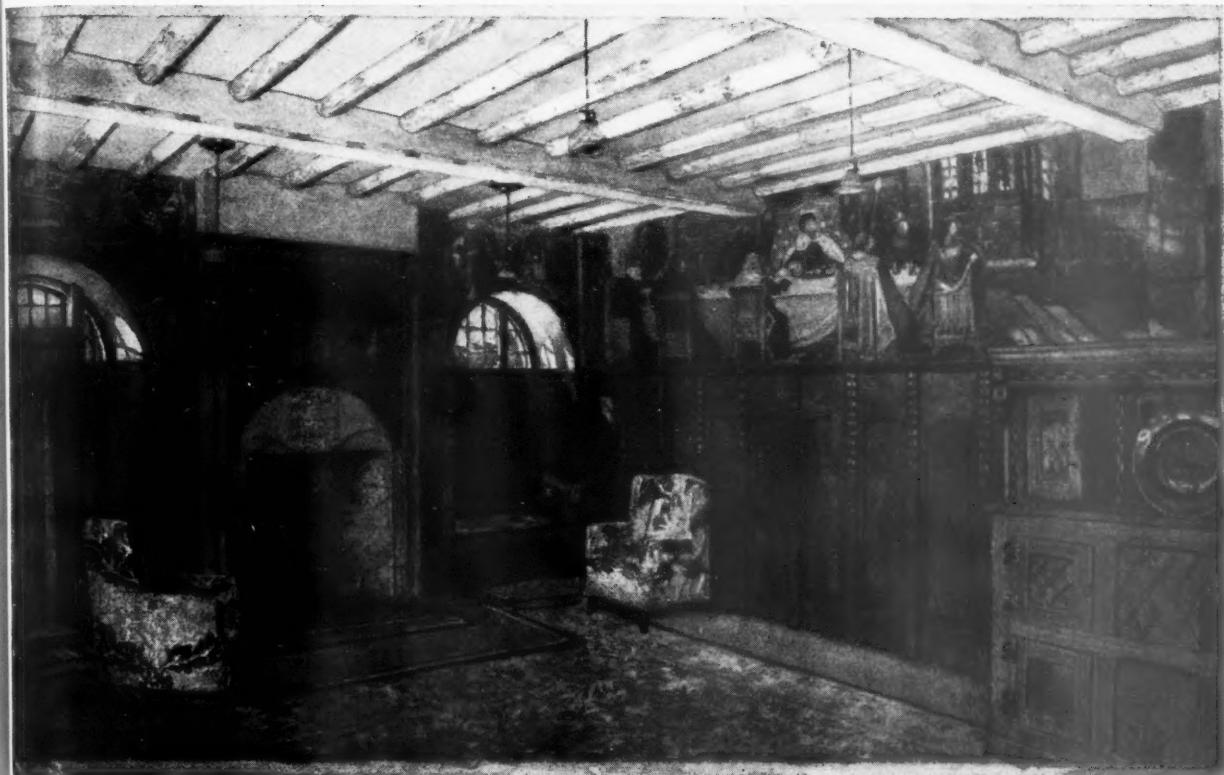
The interior of the house is planned about a large hall and staircase. A MANCHESTER GUARDIAN critic observed: 'A stately Nordic mother-goddess could have descended any of the staircases appropriately.' The living rooms are large but not too high and the ceiling rafters may be exposed and painted. The windows face south or west and large bays project into the garden. The floors are of either unstained oak or pine, depending on the client's pocket. The woodwork is painted white or Brunswick green, the 'greenery-gallery' colour which was so popular in the nineties. The fireplaces are tall and narrow in proportion and are of brightly-coloured, craftsman-made tiles and frequently have a simple white surround. The grate is of brass or copper and decorated with heart shapes. If the house was a large one, like Banney Royd at Huddersfield, Wood designed elaborate stone fireplaces carved with pre-Raphaelite figures, and decorated the library and drawing room with a frieze showing a mediaeval tournament or an idyllic pastoral which he and a painter friend executed. The perspective of the drawing room at Birkby Lodge, Huddersfield, which is now in the collection of Wood's drawings in the R.I.B.A. library, is a good example of one of his interior schemes.

Some of the largest and most ambitious houses Wood designed before his partnership with Sellers are Briarcourt (1894-95) and Banney Royd (1900-01), both at Huddersfield, and Dunarden (1898) at Middleton. Dunarden is in the farmhouse style, but the Yorkshire houses are stone built and have a more austere character, in keeping with the West Riding tradition. All these houses are richly decorated with murals, and Banney Royd is an outstanding example of Wood's work. It is well illustrated in *Das Englische Haus* by Muthesius.

During the same period Wood built the Unitarian Chapel (1892) and Long Street Chapel and Schools (1897-1901) at Middleton, and Lindley Clock Tower, Huddersfield (1899-1902). Both of the latter designs show the influence of Art Nouveau. Wood also built many small houses and cottages, including workmen's cottages at Middleton and Huddersfield.

By 1900 Wood had established his reputation. He had a thriving practice and was considered to be the most gifted architect working in Manchester; moreover, his work was awakening attention in London and on the Continent. Instead of relaxing and enjoying the fruits of his success, Wood chose to work with Sellers and experiment on fresh lines, using new

\* A drawing of Barcroft, a large cottage built at Sudden, Rochdale, in 1894, was illustrated in Mr. Betjeman's 'Honour Your Forbears' in the Jan. 1954 JOURNAL.



The drawing room of Birkby Lodge, Huddersfield

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and untried ways of building. With Sellers he produced some of the first examples of a new style of architecture in this country.

Sellers in his first forty years had to climb a slow and arduous path to success. Little is known of his childhood except that he was born at Oldham in 1861 and, like W. R. Lethaby, he was of humble parents. He received a scanty education at a Board School and at fourteen he began his career by working as office boy to an Oldham architect, whom he described as a hack. He soon became a proficient draughtsman, and his work caught the attention of a more sympathetic architect, who encouraged him and found him a more suitable employer. Sellers spent many years travelling about the country working as an assistant to various undistinguished architects and surveyors. His lack of formal training does not appear to have handicapped him, which speaks well of his mental stamina and independence. He claimed to have received his most valuable education from reading Thomas Graham Jackson and Lethaby, and from living in York for many years, where he had ample leisure to study the mediaeval and Georgian buildings.

Sellers' standards of architecture were based on his reading and on his historical knowledge rather than on contemporary work, although his knowledge of Victorian building was immense. He was essentially a practical man with a strong leaning towards classical architecture. Engineering



The First Church of Christ Scientist, Victoria Park, Manchester, 1903-04

and construction appealed to his rational and analytical mind, and the formality of Greek and Georgian architecture to his sense of order. Like Wood, he had an expensive taste in materials and he always had an eye for rich colours and textures

like black Sicilian marble and green Norwegian granite.

His personal tastes were simple and he was a quiet, shy, studious man with a passion for his library. Pretentiousness or display were foreign to his nature and

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Sellers in his first forty years had to climb a slow and arduous path to success. Little is known of his childhood except that he was born at Oldham in 1861 and, like W. R. Lethaby, he was of humble parents. He received a scanty education at a Board School and at fourteen he began his career by working as office boy to an Oldham architect, whom he described as a hack. He soon became a proficient draughtsman, and his work caught the attention of a more sympathetic architect, who encouraged him and found him a more suitable employer. Sellers spent many years travelling about the country working as an assistant to various undistinguished architects and surveyors. His lack of formal training does not appear to have handicapped him, which speaks well of his mental stamina and independence. He claimed to have received his most valuable education from reading Thomas Graham Jackson and Lethaby, and from living in York for many years, where he had ample leisure to study the mediaeval and Georgian buildings.

Sellers' standards of architecture were based on his reading and on his historical knowledge rather than on contemporary work, although his knowledge of Victorian building was immense. He was essentially a practical man with a strong leaning towards classical architecture. Engineering

and construction appealed to his rational and analytical mind, and the formality of Greek and Georgian architecture to his sense of order. Like Wood, he had an expensive taste in materials and he always had an eye for rich colours and textures

like black Sicilian marble and green Norwegian granite.

His personal tastes were simple and he was a quiet, shy, studious man with a passion for his library. Pretentiousness or display were foreign to his nature and

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Left: Holly Cottage, Bramhall, Cheshire.  
Right: No. 36 Melalieu St., Middleton, 1906;  
the first of Wood's flat-roofed houses



humility appeared to be the garment of his mind, but one was left in no doubt as to the determination and independence of his character beneath his unassuming quietness.

After working for several years at Carlisle as Assistant County Architect, Sellers returned to his native Oldham about 1900 to open a practice. He soon gained several commissions and built a large flat-roofed extension to one house by Sheepwashers' Lane. This house caught Wood's attention and so impressed him that he sought out its author. Wood and Sellers met, dined together and soon after formed a partnership. They shared Wood's offices in Manchester but each carried out his own work, although the various designs were fully discussed. It is clear from Wood's work that he benefited greatly from working with Sellers. Following his example, he began to use reinforced concrete in his design and his style became more restrained. While he still employed local materials, his work lost the sentimental mannerisms of the Arts and Crafts and Art Nouveau styles. Wood's method of design and romantic outlook were alien to Sellers, who gained more in security, companionship and prestige from the partnership. He gave to the practice not only a new outlook on design but some of that reliability and dependability which it otherwise lacked.

Between 1900 and the First World War both men were working at the height of their creative powers and the fruit of the partnership was a series of progressive buildings which in many ways anticipate the modern movement.

Sellers' first important building is a very fine office block he built for Dronsfields of Oldham between 1906 and 1907. It is a well-proportioned, symmetrical design and is constructed with a flat roof. There is nothing ostentatious about the building, no heavy detailing or superfluous decoration. Its impressiveness is derived solely from its simplicity, proportion and almost Greek restraint. It is faced in a smooth, mottled



Upmeads, Stafford, 1908

grey granite and dark green glazed facing brick. It is one of the few buildings in Oldham whose surfaces have withstood the soot and smoke of the corrosive atmosphere, and it is still clean-looking and attractive. Sellers loved working in different planes and made great play with depth in his designs, which at times remind one of Lloyd Wright's work. In this design the corners of the building are modelled to throw a shadow which emphasises the silhouette. The depth of the reveals at the doors and windows gives an effect of stability, and the deep recess over the doors divides the elevation and accents the main entrance. The cast iron railings along the front of the building are sensitively designed and fortunately survived the war.

In 1910 the first two schools of Middleton Corporation were designed and built by Sellers. They were to be of a high standard and Sellers was given a large measure of freedom, of which he took full advantage, so that the two schools, Elm Street and Durnford Street, completely shame Manchester's contemporary Board Schools and are superior in design and more advanced



Dunarden, Middleton, 1898

in construction than many of the schools built between the two world wars.

Durnford Street school, the larger of the two, is a strong, powerful-looking building. It has a T-shaped plan. The floors and roofs are of reinforced concrete and the roof levels vary for the halls and classrooms. The walls are plain loadbearing brickwork faced with a soft orange-red brick which has weathered badly. The plainness of the walls is only relieved by small areas of Portland stone and the building has an austere character. It is typical of Sellers in its clear forms and strong, simple detailing.



Offices for Dronfields of Oldham, 1906-07

the cast iron gates shown on the photograph are an example of his style.

Elm Street school is a prettier design, and its forecourt is an attractive formal garden enclosed by cloisters which form a covered way from the street to the school. This design is single-storied and flat-roofed except over the main hall, which has a pitched roof partly concealed by a parapet.

Several years passed before Wood designed any buildings in any way similar to Sellers' work, and it was soon after meeting Sellers that he designed the most romantic and picturesque building of his career. This is the First Church of Christ Scientist in Victoria Park, Manchester, designed and built in 1903-04. It is a delightful building, well kept and cared for and mercifully preserved from ruinous alteration and improvement; even the white entrance doors and polished brass plates remain today. More than any other building this one conveys Wood's vision, taste and fantasy.

It is set in a neat garden, bounded by sycamores. The building is rich in natural colours and textures; slates, common bricks and Cheshire red sandstone, all contrasted against the smooth white-painted and rendered front of the church, which in the form of a high steep gable dominates the whole of the composition. The interior is as simple and restrained as the exterior is exuberant. The church is aisled and has a semi-circular arcade which is almost as massive and impressive as a Norman one. The nave has a high trussed roof and is lit by tall, narrow dormer windows set high up in the roof. All the semi-circular aisle windows contain deep and richly-coloured stained glass, and these are the only colours in the church other than those of natural materials. The walls are white and have a dado of deep sea-green Norwegian marble. At each end of the church is an elaborately-designed screen; at the reader's end is one of mosaic and various marbles, and at the opposite end, above the entrance doors, is the panelled timber organ screen, painted white and gilt, and pierced and patterned with small crosses and incised spirals. The church is small and intimate but has a profoundly



Burnford St. Schools, Middleton, 1910

religious atmosphere and, after St. Ann's, is the most impressive religious interior in Manchester. If this were the only building of Wood's to survive one would immediately recognise him as an architect of unusual vision and stature.

Wood did not begin to use the reinforced concrete flat roof until 1906, when he built a small house at Middleton. Its plain common brick walls and straightforward fenestration make a very pleasantly-proportioned pattern and although it appeared stark to Edwardian eyes, today it does not appear at all inhuman. In 1907 Wood built a larger house near Royston, Hertfordshire, and in 1908 he built Upmeads at Stafford. Upmeads is still the home of the original client and it is the best preserved of Wood's modern houses. One immediately recognises it as a modern house by its construction and simple, clean brickwork, but there are a number of details which would be anomalous in a modern design of the present day. The windows are leaded lights, set in Bath stone; the design is axial, although not symmetrical, and the detailing and such ornament as exists are classical. The total effect is a curious mixture of Tudor, Georgian and modern architecture, but the house has a strong individual character which unites the design and the different details. Unlike many later modern houses, this one has a decidedly English character.

Upmeads is pleasant to live in and has an unusual plan. The main entrance is at the back of the house and faces north, and the front faces on to a long garden screened from the road by a hedge. The drive is placed at one side and is also screened from the garden. Indoors the hall rises the full height of the house and has a vaulted ceiling. The staircase leads off to one side in an unspectacular way, but in compensation there is a first-floor balcony, dramatically placed on the main axis of the hall. There is a pleasing effect in the interpenetration of the different areas of the house reminiscent of the Soane Museum in Lincoln's Inn Fields.

Wood constructed several other buildings of similar character and designed many more, but the outbreak of the First World

War practically ended his work and almost closed the practice. After the war Wood, who was then wealthy and approaching sixty, did not give his full time to architecture, and about 1922 he retired and decided to spend his remaining years painting in Italy. He built and decorated a house for himself on the Ligurian coast of the Riviera and lived there, enjoying a remarkably active and pleasant life until his death in 1935.

Sellers continued working in Manchester until 1947. He made no more startling architectural innovations but continued to use the ideas he had already developed, and worked mainly in a Neo-Georgian style, designing many houses about Manchester. His finest work of this period is in furniture design, in which he excelled. Sellers used veneers and designed simply-proportioned furniture, completely undecorated and relying for its effect on proportion, fineness of detail and the colour and texture of fine materials, amboyna, mahogany, ebony, ivory and mother-of-pearl. Professor Charles Reilly greatly admired pieces of Sellers' furniture and remarked that some should be in the Victoria and Albert Museum. Unfortunately most of the furniture is lost, but a collection has been given to the Manchester City Art Gallery.

James Henry Sellers survived Edgar Wood by over eighteen years and died on 30 January 1954 at his home at Alderley Edge, Cheshire.

Wood and Sellers made a memorable partnership. Each was an architect of rare calibre, independent in mind, progressive in outlook, and originally creative; but their most singular work was the product of their partnership. The combination of their talents—Sellers' practical grasp of a new form of construction and Wood's intuitive insight in design—produced a series of buildings which are clearly forerunners of modern architecture. These severe, square-cut, flat-roofed buildings, now nearly fifty years old, still cause one to pause and admire the venturesomeness of Wood and Sellers; two enterprising Mancunians who were surely among the most adventurous architects of their generation.

# R.I.B.A. Conference on the Design of Health Buildings

## Report of the Discussions. Part II

MORNING SESSION, 22 OCTOBER.

Mr. MAXWELL C. TEBBITT [A] in the Chair.

**The Chairman**, in introducing the author of the first paper, said that Miss Turner, who was Chief Education Officer at the Royal College of Nursing Postgraduate Educational Centre at Birmingham, had until fairly recently been Matron of the Royal Infirmary, Liverpool, and she was an experienced nurse.

### THE HOSPITAL FROM THE NURSING POINT OF VIEW

By Miss T. Turner, A.R.R.C., S.R.N., S.C.M., Diploma in Nursing, University of London.

Miss Turner, in introducing her paper, said that she had not mentioned the aesthetic aspect of the hospital. That was not because it was not very important, but because she would not dare to raise it in the Royal Institute. She had been delighted, however, to hear Mr. Llewelyn Davies and Mr. Molander discuss it, because a beautiful building made a great deal of difference both to the nurses and to the patients.

It had been suggested that a committee was difficult to handle and that the architect should be shut up alone with the administrator to begin with. She did not agree with that at all. From the very beginning there should be an administrator, a nurse, a doctor and a patient, because the doctor and the nurse in particular spent many more hours in the hospital than the administrator, and if they were consulted at the beginning of a project things would be much easier at the end. If the example in co-operation set by the present Conference were followed up and down the country the planning of hospitals should be much easier. The nurses were very anxious to help to plan the hospitals of the future.

### Discussion

**Mr. F. Charles Saxon, M.C., F.R.I.C.S. [F]:** I should like to express the appreciation which we must all feel for the care which Miss Turner has given to this paper, which displays an immense knowledge of the work of hospitals and contains a great deal of useful information for architects. She makes it obvious that hospital planning is a matter which we must consider very seriously. When we hear that the Nightingale ward plan of a hundred years ago is still being built, it is a reflection on somebody.

On the question of nurses not understanding plans, some of us had to study first-aid during the war, and perhaps nurses might have a course in studying plans.

Many young architects, I am sure, would be very glad to give such a course! Nurses who see the exhibition and the models in this building will understand much more about it, and as Chairman of the Allied Societies Conference I would make a plea for some of the good Institute exhibitions such as this to be taken round the provinces.

We are dependent on the nursing profession to carry on the work of the hospital. A hospital is a place where the nurses work and the patients suffer. Possibly unskilled labour might be used for some of the jobs at present done by nurses, but that is outside our scope; but the fittings and the structural side of the hospital are our concern. Do we design floors which are tiring for a nurse to walk on? It is tiring to walk on a solid floor which has no flexibility. The standardisation of the height of fittings is another important point; engineers should design fittings so that a nurse is not constantly changing the angle of her back. It has been done on the Continent, but we do not seem able to do it here. My daughter has been a nurse, so that I know a good deal about this.

On the question of noise, when we build technical colleges we put in floating floors and adopt other devices to stop impact noise. Do we think enough about that? Whether the doctors would agree to acoustic tiles with a lot of little holes, one for each fly, is a question which we can put to them, but it is worth asking, because if it will keep down noise while still being sanitary, perhaps we ought to think of it.

All parts of a hospital are important, and not least the nurses' home. Many nurses' homes seem to be a cross between Wormwood Scrubs and a factory, but we should make them attractive.

Can the line of thought which we use in planning a factory be applied to hospital planning, bringing the patients in as raw material and ending up with fit men and women coming out at the other end? Looking at it in that way, like the production line in a factory, the patient goes from the ward to the theatre, then to the recovery room, and is then brought back to the same ward, which seems odd. Something might be done to streamline hospital planning. The nurses have put up a challenge to us, and if we as planners can help them, it is our duty to do so.

**Mr. Alister G. MacDonald [F]:** Like Mr. Saxon, I have a daughter who has gone through the mill in the nursing profession, and I too agree that we should look on this Conference as a challenge. I was a patient in a hospital myself on one occasion. It is said that architects must be masters of all trades, and I think that the architect who does hospital work ought to get himself run

over or become a casualty in some other way in order to learn from the inside how a hospital smells and feels and how it is run. In view of the shortage of nursing staff, possibly some of the ambulant patients might become student nurses, and I should like to suggest that to Miss Turner.

I support Sir Arthur Stephenson that architects must see that good quality is used throughout the hospital and not sit down under the argument from the financial side that it costs too much. We must have our figures ready to show that over the years our ideas are the cheapest.

Miss Turner makes the point that if we, with our high-falutin' planning ideas, want to have large hospital groups, it will upset promotion in and the happiness of the nursing profession, and that is an important point. Mr. Saxon suggested that it was a matter for the doctors and nurses to settle, but it is also one which architects should take into consideration.

**Dr. C. T. Maitland, Ministry of Health:** I wish to confirm, from the point of view of my profession, the soundness and moderation of all that Miss Turner has said. She spoke of someone saying that nurses were only interested in detail. One reason why nurses have come rather late into the planning team is that, being women, they are more interested in the particular than in the general, and you have to be able to generalise to guide those whose experience is in other disciplines to a better understanding of the position. My experience in talking to many nurses is that they find it hard to show how far their views apply generally, but happily there are many nurses who are now able to do this, and I am glad to work in the Ministry with several nurses who have this ability.

I agree that the smaller the hospitals the better. I have met many matrons who would prefer not to have a hospital of over 300 beds, and would like it to be smaller if possible, and I believe that they are right. Research work has been carried out which is leading to novel conceptions of ward organisation, but I would suggest that these be looked on as experiments; do not regard the case as proved. Some of us wonder how far we can depart advantageously from the 30-bed unit which is in accordance with the organisation of nursing work in this country, of which the ward sister is the king-pin.

Miss Turner is right in thinking that it is undesirable, whatever Captain Stone may say, to have an administrator and the architect bulldozing things through; it does not work. I was also glad to hear Mr. Saxon's remarks, and it is good to find that our three professions can see things so harmoniously.

**Mr. R. Llewelyn Davies [A]:** Most of us who are concerned with hospital planning have found that the most common defects in completed buildings and the most common failures have generally been attributed to failure to obtain proper consultation with and advice from nurses in the first place. That is something which nurses can

put right on the lines which Miss Turner has suggested. The 30-bed nursing unit is a long-term historical development which has grown from nursing experience, and not just an architect's idea. It is an attempt to solve the contradiction between the optimum size of the nursing unit from the point of view of nursing and its optimum size from the point of view of administration. It is a compromise between a size which is a little too small for efficient administration and one which is too large as a nursing unit, because 20 beds is the appropriate nursing size.

You can solve this problem in two ways: by a compromise—the 30-bed ward—or by dividing administration and nursing: developing a smaller nursing unit and grouping several of these in a larger administrative unit. I agree with Dr. Maitland that this must be regarded as an experiment, but it is an interesting one, and I look forward very much to the results of the three experimental studies which I believe his Ministry is at present undertaking on group or team nursing, where I believe that the total complement of nurses employed in each case is the same as before the experiments were begun.

On the question of nursing economy, a nurse member of my team has recently studied Danish hospitals, where a team nursing arrangement with groups of 12 patients in charge of a trained nurse has been functioning for many years. There it was noticeable that considerable economies were obtained in relief staffing by the larger administrative unit. In our own experiments, which we hope to start in the New Year, we shall use 28 nurses and 1 part-time nurse for a unit of 64 beds on a group assignment basis. This ratio of staff to beds is very similar to the national average.

The height of fittings is extremely important. We have been engaged in our experimental buildings on the very careful design of the heights of all fittings to suit nursing convenience, and we have had valuable cooperation from the nursing side, and from the Department of Anatomy in Birmingham.

**Miss Adams (Nursing Officer, South-West Region Hospital Board):** I speak as a nurse, and I support all that Miss Turner has said. I am particularly interested in her idea of a mock-up sanitary annex. She said that nurses should be educated in the reading of plans. My own education has progressed, and I have learnt, under the excellent tuition of two architects, how to read a plan. I am now doing my best to educate the senior nurses and matrons in my Region in this respect. Not only have we to educate our matrons in the reading of plans, but our Hospital Management Committees must learn to invite the matrons, when they have learnt to read the plans, to all the discussions. The matrons must be brought in not only on questions relating to theatres and wards, but also to discuss kitchens and laundries. We have laundry and kitchen supervisors, but the nurses should work hand in hand with them.

I know that it is impossible for a Con-

ference such as this to be held in each Region, but would not it be possible for a selection of some of the excellent ideas and plans in the exhibition to be sent out to senior nursing staff? The best person to select those plans would be Miss Turner herself.

**Miss Turner,** replying to the discussion, said: Mr. Saxon was very kind in his support, and his idea of sending the exhibition round the provinces is an excellent one. I am grateful to Mr. MacDonald too for understanding that one of my objections to the large ward is that there are not enough senior positions to apply for. Dr. Maitland was also very kind in supporting me. I am glad that there is to be some standardisation of fittings, and that you agree that you ought not to listen to Regional Boards when they want to use cheap materials. We have to walk on your floors, and we always appreciate the best that you can give us.

#### THE GENERAL DESIGN PROBLEMS OF THE HOSPITAL FROM THE MEDICAL POINT OF VIEW

by **Dr. J. O. F. Davies, M.D., B.S., M.R.C.S., Senior Administrative Medical Officer, Oxford Regional Hospital Board**

**Dr. Davies,** in presenting his paper, said that in population the Oxford Regional Hospital Board was probably the smallest in the country, but they liked to think that they were large in ideas, and they were certainly receptive of ideas. Perhaps that was why they had been associated with the Nuffield Group on the function and design of hospitals in a number of projects.

In his paper he had said that to come to the right conclusions was in every case an essay in human relations. He must make it clear that he did not subscribe to Captain Stone's technique of locking the architect up with one person, 'even', he added, 'if that person were myself'. It was a very good thing, however, if one person could co-ordinate all the ideas which came forward, and learned to deal with the claims made by over-optimistic clinicians.

The Oxford Region had been pioneers in restoring matrons to the position which they had held before the introduction of the National Health Service. Since its introduction, consultation with matrons had been about the last thing undertaken by anybody, but Management Committees should in their ordinary day-to-day affairs bring in the matron, and he would include the matron in the group of those to be consulted, although he did not want to have an enormous committee.

#### Discussion

**Professor H. W. C. Vines** said he wished to emphasise the necessity of not building hospitals exactly for the needs of today. There was a steady rise in the work going on in hospitals, a high demand for beds, increasing numbers of out-patients and an increasing use of techniques which sometimes slowed down the turnover of patients. There should be by now in every Region

suitable graphs showing the rate at which work in the Region was moving, and graphs for Hospital Management Committees as well. Whenever an architect had to build a hospital he should be able to refer to these figures showing trends in the area concerned. They might be much more valuable than the financial statements which occupied the time of many members of the staff for nobody's benefit in particular.

The first of the obvious functions of a hospital was the care of the patient, and here there should be particular emphasis on the reduction of the stay in hospital where possible, because it cost about £3 per day for every patient. Another function was the care of out-patients, and the aim there was to ease the demand on beds and avoid the anxieties to the patient of hospitalisation. If patients could be kept out of hospital they might do much better. The third function was early diagnosis and treatment of disease for the prevention of physical deterioration. Much of the out-patient system, apart from the ordinary clinics, was linked with the siting of the ancillary services of radiology and pathology, and it was important to have those more in relation to the out-patient service than in relation to the in-patients.

Then there was the question of integration. There was the integration of the departments of the hospital within itself, what might be called the internal integration, and in this respect there was an increasing trend towards specialisation. Specialists were very dangerous people; many of them ran rackets and loved empires. They wanted their own beds, their own theatres, their own nursing staff, and nobody else must trespass on their premises. Ultra-specialisation ultimately became bad medicine. How were architects to design a hospital which was filled with these little empires, all of which apparently required an incredible quantity of room? They would have to be tough and say that the demands were unreasonable, and that a reasonable building could not be provided unless the specialists gave way to some extent. Diplomacy was necessary.

This ultra-specialisation might not continue. In time the patient might be investigated not by Doctor A or Mr. B, but by a medico-surgical team in the first instance. This would probably mean the disappearance of the present narrow departmental allocation of beds. Many narrow specialisms might be absorbed into medico-surgical teams, and there would be medico-surgical wards, where it might be necessary to have the ancillaries within a reasonable distance, partly to save carrying patients all over the hospital and partly for convenience and speed of diagnosis. That had happened on the Continent and was nothing new, but it had not been introduced very much in this country, where there was still a love for the centralisation of what were now becoming over-large departments. There might also be operating theatres on the same floor, and the patient coming into hospital would be dealt with not by consultation, by a surgeon coming from the other side of the building to look

at him for ten minutes, writing a note and going away, but by real study by a medico-surgical team.

There might also be integration of the external services as well, and here new functions might develop. So far as theatres were concerned, Professor Vines said he had seen a hospital in America with major and minor theatres in the same suite, but people would not use the minor theatres, thinking that to do so was derogatory of their importance. The integration of the external services must become more and more linked with the work of local practitioners. There had been a stage in which the hospital had been a sort of ivory tower of medical mysteries, full of consultants, and the local practitioner had been regarded as somebody outside. Some of the senior general practitioners might be raised to the position of consultants in general practice. There was an increasing use of X-ray departments by general practitioners, and of physiotherapy and pathological departments, some of which at present were not large enough. There might also be the projection of these ancillary services into the patient's home. The hospital would have to have spare apparatus and accommodation for domiciliary treatment. There might even be the loan of sickroom equipment to homes—equipment which would be provided by the hospital and stored there. All this would mean increasing expense, but the time had come to capitalise maintenance at the beginning and save as much as possible of the growing bill for salaries and wages.

Dr. Davies had said nothing about nurse-patient communication, a service which should be built in when constructing the hospital, as should be done with ancillary services such as oxygen, distilled water, and so on. It was extremely expensive to put them in afterwards. When there was only a buzzer for nurse-patient communication, the nurse had first to go to the patient to find out what he wanted, and then walk back to get it. It was much better to have a system by which the patient could speak to the nurse and say what he wanted straight away. Such things were expensive to install, and a decision had to be made on whether they were essential or not. If they were, the architect should insist on having them in the plans, whatever they cost.

He wondered why architects always put lights in the middle of the room, although nurses worked at benches and sinks round the edge, and were therefore working always in their own shadow.

**Mr. P. H. Knighton, M.B.E. [4]**, Architect to the Newcastle upon Tyne Regional Hospital Board, underlined a few simple but basic principles which arose from the opening paragraphs of the paper, dealing with the approach to hospital planning. After ten or twenty years spent in continuous hospital planning, he said, it was probably not an unusual experience for architects to conclude that they knew nothing at all about it, and they might well despair of ever knowing anything about it.

He felt that that was an excellent stage to reach, because only when one freed one's mind from the trammels of tradition could one become receptive to new ideas, while at the same time benefiting from what had gone before.

The first basis of approach to the planning problem, therefore, should be one of humility, receptiveness of ideas, knowing nothing and intending to find out the best solution for a particular problem. The next principle should be to bear always in mind those that they were serving, the patients. Often lip service was paid to that principle, but they should think of the patients in the way in which they had been described by the old Knights of St. John, 'Nos seigneurs les malades'—'Our lords the sick'. That was much better than thinking of 'Our lords the consultants' or 'Our lords the administrators'. They should remember the simple fact that a hospital was a guest house. He mentioned those principles because he had so often found them helpful.

Thirdly, to arrive at the right conclusions was, as Dr. Davies had said, an essay in human relations, and that must mean compromise. Hospital planners must not become so very expert and so involved in all the complications and in intricate deliberations that they spent too much time in doing too little. Their work should be good by all means, but not too good to be true, not too good ever to happen.

The conflicting medical, nursing and administrative opinions with which architects were so often beset could be a sore trial, but he recalled some advice given by Professor Sir James Spence, who had been professor of child health in his own city of Newcastle. It was advice which was applicable to all hospital architects. 'Just listen', he said, 'to all their evidence, and then go quietly away and make up your own mind. They are only for the moment the doctors and the nurses and the administrators there to serve you in order that you may serve them, and as the architect your judgement is likely to be as sound as anything.' He had found that very good advice. Architects might not know as much as they would like to know about hospital planning, but they did know about planning. They could not afford to spend months in hospital seeing processes at first hand, but they could get the evidence of those who did and could analyse the accommodation and circulation problems and design to ensure economy of building maintenance and running. They should stick to essentials and try to simplify rather than complicate their problems.

Although Captain Stone condemned all committees, there was a great deal to be gained from a well-chosen ad hoc planning committee of four to six lay members, who could bring sound judgement to bear on the preliminary activities and excitements of a group of experts. He knew no better method of consultation than to have two Management Committee members and two Board members working with the officers on both sides, reporting back and collecting further evidence as necessary. There was no

surer way of defeating its efficacy than for architects to assume that doctors and nurses were as skilled in reading architectural plans as they themselves were unskilled in reading X-ray films or medical prescriptions.

**Mr. Ernest Seel [F]**, commenting on Professor Vines' statement that ultra-specialisation in medicine ultimately meant bad medicine, suggested that ultra-specialisation in architecture was very likely to produce bad architecture. He had been surprised to find that the Conference started with ultra-technicalities of an architectural kind, but had gradually got back to the patient, who was the only reason for a hospital. A large section of the population feared hospitals and everything to do with them. While the doctors might bear some responsibility for that, architects had, at least in the past, contributed seriously to that feeling.

He did not agree with Miss Turner's comment on Captain Stone's suggestion for the signing of the plans; he did not think it was wicked, but just plain stupid. Plans did not mean to the layman what they meant to the architect. Having spent many hours in the R.I.B.A. building vetting the results of the training of architects, he could assure Miss Turner that many architects could not read plans either! They had acquired a certain facility for putting together in jigsaw fashion the familiar circles, rectangles and triangles, but that did not imply the essential ability to imagine three-dimensionally the building from the shapes on a piece of paper, and to imagine it not simply as a static affair but as something alive and moving. The power to do that was by no means common among architects, and was obviously still less common among laymen. That was a challenge which architects had to face; they had to derive from the client his requirements and put to him the implications of their plans.

**Mr. H. J. Woods [4]** said that there came a stage in the meetings of committees when the architect became the most important person in any building project, being the translator of a host of ideas into a practical scheme on paper. To do this efficiently, which meant also doing it economically, the architect must know his job thoroughly, but the question arose whether, with the complexity of present-day hospital design, the average architect in general practice could do so. Even if all the excellent research data were made available to him, one of his most important assets would be experience, constant and up to date, which would enable him to use the data properly and to sift out the chaff in the form of idiosyncrasies which often arose on such occasions. He must have the ability to create a balanced, integrated design suitable for his purpose. If he was not competent, what was the answer? Mr. Woods suggested that the initial investigation and planning would have to be left, in the case of a Hospital Board, to their architect or to an architect with a sound hospital reputation, who might act as consultant to

the local architect. That aspect of planning was even more important now that the bulk of the work for many years to come was bound to be concerned with improvements and additions to existing hospitals; work which presented problems often requiring as much ingenuity and knowledge as new works.

He thought that the idea of a standard plan was wrong. Standard equipment and detail were desirable.

**Dr. Davies**, replying to the discussion, said: We in the Regions are doing what Professor Vines wants us to do, namely recording what goes on and profiting from the various trends which our records show. When we build, we try to build for the needs of tomorrow as we see them. Our effort is to keep patients out of the hospital, even if they have to come there for a few hours at a time. Professor Vines is, I am sure, an expert in dealing with 'empire builders'. Many of us have to face that problem, and there are various techniques. The reason for my suggestion of a whole group of theatres as nearly identical as possible is explained by what he said about major and minor theatres.

In the Oxford Region we have had open departments for X-ray and pathology laboratories in almost every part of the Region, and we have not found that the demands which general practitioners make on those services are unreasonable. Our pathologists and radiologists have been able to cope with them.

On the question of nurse-patient communication, I have not had much experience of the two-way system, but it should save the nurses a good deal of walking about. As for the provision of oxygen, distilled water and that sort of thing on tap, in some places where this has been done the system has been remarkably little used. If they are costly to provide, we should select the particular beds which they are to serve. Certainly the post-operative beds near the theatre should have them, but they may not be necessary in all the beds in all the wards.

I am sure that the advice of Sir James Spence which has been quoted is wise. Mr. Seel seemed to agree that, however hard we try, second thoughts may be best. I have had signatures on a plan which have meant nothing when a man has had time to think again, and sometimes he has thought to better effect. In the Oxford Region we have a very small though very competent architects' department, and we have to rely to a great extent on private architects. We intend to go on doing so, and have had no reason to regret it.

#### AFTERNOON SESSION, 22 OCTOBER.

**SUMMARY OF THE PAPERS** by Mr. D. A. GOLDFINCH, E.R.D., Dipl.T.P., F.R.San.I. [F], Architect to the Birmingham Regional Hospital Board, as Chairman of the Session.

**Mr. Goldfinch**, in summarising the papers and discussions, said that the

Hospitals Committee of the R.I.B.A. had hoped that the Conference would be a gathering of post-graduate architects interested in health buildings. There had been much research in all countries into the various aspects of the related problems, and it was clear that any solution required the concentrated effort of the medical, nursing and architectural professions.

The close relationship between population trend and hospital need had been seen against a background of regionalised hospitals in Sweden since 1862 and useful data had been provided, but discrepancies could arise from applying too rigid rules. With the demand ascertained, the grouping of beds in a hospital must take account of (a) the patients' fear of the unknown, (b) facilities for the medical and nursing professions to give of their best, and (c) the economic functioning of the group. The optimum size of 400-600 beds had much in its favour because it gave a regular demand upon specialist departments for diagnosis. Any great increase in that number must call for duplication, in which case the convenience of location to suit the patient became the chief consideration.

The humanities of nursing could be easily swamped in a hospital that was too large. Only if the plan and overall size facilitated happy relationships between staff and patients could real success be claimed for design. The effect of visitors upon patients should also be kept in mind when locations were settled. With good transport, relatives could easily travel to the periphery of a town, but too much regionalisation of facilities would soon give rise to criticism. There are prejudices against sending a relative to hospital away from the home town.

Any design must cater for flexibility and expansion. This did not necessarily mean an increase in beds, because a reduction in the overall length of stay of patients could be achieved by more specialised ancillary accommodation such as operating theatres and laboratory units. The effect of the day hospital upon both out-patient and in-patient accommodation had yet to be assessed and the medical opinion that general practitioners would have facilities for more effective treatment was to be welcomed. Policy decisions in some thirteen countries had resulted in an optimum size of 250-350 beds, located on the periphery of towns with out-patient clinics and health centres within close reach of the centres of population.

As regards the grouping and sizes of wards, the pavilion type introduced from the Continent was the antithesis of the American skyscraper type, but where land was precious its continuance might have to be reconsidered. It had been questioned how far it was possible to give a comfortable, kindly feeling with wards stacked vertically. Moreover, the arrangement could affect quite considerably the number of nursing staff required.

The number of small wards had steadily increased and this had facilitated bi-sexual nursing units with a corresponding effect upon a long waiting list because of more

easy redistribution of beds. It appeared also that medical, administrative and architectural reasoning had given a degree of permanence to the 30-bed nursing unit, though for acute patients a 20-bed unit might be preferable. The need to relate the figure to the working capacity of the nursing team should not be overlooked.

Today, hospitals should be designed not only to facilitate nursing but to attract recruitment of nurses.

A reference had been made to the centralisation of such matters as linen, special equipment, sterile supplies, etc. Central sterilising alone required a considerable area (approximately 2,300 sq. ft. to serve 275 beds). He himself was assured from a recent visit to Spain that centralisation of this type saved time and reduction in damage to equipment.

On the question of general planning he thought it desirable to group ward units so that they could be easily paired for supervision. The special requirements of children and maternity wards might justify individual grouping and he found no reason why these units should not be located on upper floors. On the question whether high ward blocks were liveable in, attention had been drawn to the cost of lifts and lift maintenance. Although grouping of ward units formed a major part of the skeleton, it was essential that care and attention be given to the location of special units such as operating theatres, kitchens, radiological departments, etc.

The health centre helped to reduce the ever-increasing load upon the hospital out-patient department; with a full and adequate G.P. service the centre would help to keep the patients 'out' rather than 'in'. Nursing opinion appeared strongly to favour a separate department for out-patients of all classifications rather than the attachment of consulting suites to the in-patient floor of any specialty. The planning of a general-purpose consulting suite had been studied with interest, but the obstetricians' needs required special planning.

As part of the current speed-up of in-patient treatment and more rapid turnover of beds, the operating theatre accommodation had generally been found wanting. Changes in the type of anaesthesia and increasing specialisation in types of surgery had both had a profound effect. Serious concern had been expressed at the sepsis rate. The demand of the engineer for plant accommodation was very extensive but must be met if a proper control of asepsis in the theatre was to be effective. It would be as well for architects to discuss with doctors and nurses such matters as central sterilising departments, post-operative units, elimination of bacteria-collecting surfaces and fittings and grouping of theatre suites.

Regarding the suggestion of Mr. Aldis that a great contribution to planning would be made if operating theatre suites had a 10 ft. ceiling height, it was interesting to note that this height had been achieved in Sweden.

Experience had shown that a special kitchen and dining block was desirable.

The increase in non-resident staff meals had given rise to a dining room meal service for staff, while the availability of really efficient heating food trolleys for delivery to wards had ousted the need for an integral and central location.

Research had shown a need for a wider understanding of the problems by architectural, medical and nursing professions. The drafting of a design programme for a major project was the stage at which such co-operation could start. By an interchange of observations and requirements, within the policy decisions of the appropriate standing committee, a full schedule of accommodation had been adopted as the design programme.

Mr. Molander had reminded the conference that hospital design was a matching procedure, where premises and solutions influenced each other respectively, so that the architect should seek to know about the basic problems. As he had said, there was no risk of our out-stripping hospital development.

The competition system to which reference had been made was a matter about which the Royal Institute felt quite strongly. He thought that where the design programme for a competition had been drawn up with the full co-operation of the medical, nursing and architectural sides, then the results of the competition could be expected to be satisfactory; but where the programme had been lacking, then the design would undoubtedly require numerous modifications.

He thought it would be wrong to set out any specific conclusions arising from the conference because the individual thought and study of each architect would bring about individual solutions. That was as it should be, for we should live to rue the day if we created type plans without regard for local consultation. Quiet reflection upon both the papers and the discussion would be of great benefit.

#### Discussion

**Mr. T. W. Haird [F]:** What is the best material for the main corridor of a hospital—the best surfacing material?

The Chairman read extracts from comments by Mr. Keith Neighbour, an Australian architect who had been investigating hospital and health planning in the United States. Mr. Neighbour said that the architect required some understanding of contemporary thinking in medical philosophy and treatment. A cursory examination of hospital wards was not likely to reveal this thinking, nor would unresisting acceptance of new medical concepts, translated into a physical plan, by medical men, produce a good hospital. If the architect were to be something more than a blue-print maker his contribution should be intelligent criticism of the programme. The final result could never be better than the programme, which emphasised the need for a sound and adequate programme before the commencement of the scheme. In order to criticise the programme intelligently the architect must

be aware of the basic thinking behind it. It had been said that in the last ten years we had seen a great humanising influence which had revolutionised the architecture of schools and while that had been going on the hospital had remained as cold and impersonal as its pathological laboratories. The new concepts in medicine and health were waiting to be translated into new programmes and new plans. Would the planning be as exciting as the concept or practical, dull, serving but not stimulating?

**Mr. W. J. Jobson [A]:** Could not Nature take a hand, as well as doctors and nurses, in healing patients? Has any research been done into shortening the stay of patients in hospitals and making the task of those who work in hospitals lighter by ensuring that the patient can see the countryside and Nature through the windows? I notice that when visitors call on patients they bring bouquets of flowers or some fruit. When patients can see out of their windows from their beds and can see natural objects to which they are accustomed in their daily lives, does it have a therapeutic value and help to heal them?

**Mr. Guy Aldis [A]:** said that with the ever-decreasing size of the ward unit the patient-nurse contact became more and more important. He continued: It was an engineer attached to the East Anglian Regional Hospital Board who evolved the talk-back system which is now in operation. The system as a system works admirably but in toto it does not work at all because when the patient presses a button and asks, 'Nurse, may I have a glass of water?' no nurse is there. My engineer was at this maternity home last week and he arranged a test in which a woman patient made a request. It took him 10 minutes to go round the place to find a nurse to answer it. I do not know whether Miss Turner can help us, as architects, to obtain a better patient-nurse system.

**Mr. D. Garbutt Walton [F]:** asked how they could find the right environment for the patient. Miss Turner had spoken of a 'contented patient'. How could the architect produce the environment which led to contentment among patients? The architect would always be faced with the everlasting difficulty of reconciling the requirements of various departments, but eventually those problems would be resolved. But so far the discussion had not answered the question of how to banish fear from the patient's heart. The answer might be to spend more money. If the patient left a good home, he should be made to feel that he was entering something personal from which, when restored to health, he would take up the threads of business again. If he came from a poor home and from poverty, he should feel that in entering hospital he was entering something better than he had known before and something which he would leave with better ideas. If the architect could achieve this, he was fulfilling a two-fold purpose of architecture; for, while he was fulfilling a practical need, from that

practical need would come a therapeutic value.

**Mr. Peter Gundry [A]:** I want to put a question to Miss Turner about the kitchen facilities. In America the field of dietetics is taking over the feeding of the in-patient more and more—almost 100 per cent of meals provided—and the diet kitchen and the work of the diet kitchen is ever-increasing in this country. Every hospital is taking away a portion of the main kitchens to create a more specialised unit. This has many problems. No longer is the feeding of the in-patient the province of the chef and the general cook; and surely, therefore, centralisation of the feeding of the staff is becoming more difficult. Can you foresee a stage at which the ward unit might have its own diet kitchen staffed by its assistant dietician, in close harmony with the nursing staff? Miss Turner says that feeding should be supervised by the cook. I think the feeding of a sick person should be supervised by a trained dietician who has the medical background in hand.

**Mr. K. J. Allsop [A]:** One important point has not yet been raised. It is the question of the number of beds in hospitals. A figure of 600 has been mentioned, but one important side of the medical profession is that of the teaching hospitals. What is the minimum size for getting the best possible output of good trained medical staff, both doctors and nurses?

**Mr. Alexander Gray [F]:** To what extent should we encourage and make use of artificial means of lighting and ventilation in the planning of our various departments, particularly the ward unit? In Mr. Davies' plans I detect many ingenious ideas intended to preserve the best of both worlds—that is, the natural air and daylight for those working the wards, at the same time trying to shorten travel distances.

Mr. Gray said he had discussed the advantages of the race track plan with an American hospital promoter and at the end of the discussion had wondered whether we, in this country, were not slow in refusing to admit the advantages of the system, provided that there was excellent ventilation and excellent lighting. It seemed that the Americans might have solved the problems. When the American had explained that the nurse spent a good deal of her time in the wards which were enjoying the best daylight, Mr. Gray had wondered whether we were not trying to get the best of both worlds and in fact getting the best of neither.

**Dr. Ramsey,** who said he was engaged in administration, described the function of the hospital as primarily medical. It had to investigate disease and to treat patients so that a great deal of preliminary work had to be done at medical level by the Regional Board and the hospital staff before the architect was called in. The architect would be called in as soon as that spade work had been done.

There was no doubt that the matron was often not consulted about hospital architecture and that this was deliberate. Many management committees objected to the matron being in at the conference, and it was up to the Regional Board representatives and the architect designing the hospital to insist that the nurses and people from the therapy department, for example, were shown the plan. A great deal of empire building was taking place among hospital administrators, and the technical experts among the staff were not always being taken into consultation.

He had found that an ad hoc committee, for a reasonably sized scheme, was an advantage, provided that it was small enough and that people on it did not live too far away. There was no difficulty in getting together representatives of the Regional Board officers, the medical staff of the hospital and the lay staff of the hospital, provided the number was not more than six or seven. These people could consider the plans produced by the architect, who would be in attendance to discuss them.

**Mr. F. C. Saxon [F]:** Miss Turner said that the central kitchen should provide for the feeding of the nursing staff and all others. Is there any differentiation between a city hospital and a country hospital? One of the examples in the exhibition shows a nursing home a considerable distance from the hospital. After a nurse has completed her tour of duty, does she want to go back into the main hospital for her evening meal? In the case of a large city hospital, where the building is one large building, it might be all right, but the situation might be different elsewhere.

**Mr. John Stillman [A]** asked how long a permanent hospital building was supposed to last. A good deal had been heard about changes in medical techniques and it had been said that departments became obsolescent. In hospital buildings surfaces without joints were demanded, which seemed to over-rule the flexible constructions used in schools which permitted later alteration of the building.

**Mr. W. A. Guttridge [F]** questioned the use of mechanical equipment, which he said was bound up with the adoption of the race track ward. He spoke of a visit to America with Professor Vines, when they had seen many mechanical appliances. I feel, he said, that there is a great danger of overdoing them. At one hospital, for instance, they have two mechanical conveyors at each end of the hospital on which a basket can be placed and sent down to the central supply department. It is filled with Coca Cola or whatever it is and sent back by conveyor and automatically slung out at the end of the ward. The administrator said that it took two men full time to keep these conveyors working and that these men might just as well take the Coca Cola up themselves.

Perhaps I might answer the question about floor finish. There was a high-

powered committee on this question. I understand that after months of deliberation they decided that the best floor finish for that purpose and for wards themselves was linoleum.

**Dr. Maitland** said he was as sensitive as any to the sometimes apparently unreasonable demands of the individual clinician. Dr. Davies had suggested that only once in his professional life-time had a clinician, sometimes an eminent man of international reputation, the chance to secure those facilities in a hospital. Usually he worked in a rigid structure, there was no money to alter it, and he could not get what he thought desirable.

Sometimes such eminent men were interested only in their subjects and they tried to get as much for those subjects as possible. It was such a man whom people wanted to look after them when they were seriously ill. These men had a depth of special knowledge, and patients were grateful that it should be used for their benefit in time of grave need.

It was a fact that such men were not good in committees, and that was why others—architects or members of other professions perhaps—should help. We are sometimes inclined to think how difficult such doctors are, he said, and you may even say that they are quarrelsome and uncooperative and making difficulties by staking large claims. I beg you to believe that that is a natural consequence of the excellent mentality which we need. We want their knowledge and their interest. We want to get some wisdom out of them, and that is the difficulty about these committees. We need people who have the confidence of such men and who can interpret their views. We want men who will retain their confidence so that they know, if they do not get all they want, that they are getting a square deal.

Dr. Maitland said that architects could not be amateur doctors; they could not listen to all the specialists and then form a judgement any more than he himself could judge between different views in the architectural profession. The present method adopted was to hope that the man selected as chairman of the medical committee of a hospital would have the sense of judgement, of compromise and of giving others a square deal which was necessary to his filling the appointment successfully. There were chairmen of medical committees who had all this, who were constitutionally so designed, but not all men were like that and, in addition, the offices were rotating offices and there was not time for a man to acquire the necessary skill while in office. Architects wanted an interpretation and a balanced judgement from doctors to help them form their own balanced judgements, and fortunately some doctors were able to help them in this.

Specialists who made big demands were acting in accordance with their best lights. Others, with different psychological gifts, had to co-ordinate their views in order that the architect should not be left to collect as best he could the thoughts of today and

those which were being formed about the future. For instance, a prominent medical officer of health in Scotland had said to him that in the future there might not be such difference between medical and surgical wards as there was at present.

On the subject of mechanical devices, Dr. Maitland said: We cannot have engineers imposing on us solutions for heating or lighting without being quite sure that they are appropriate. Those are things in which we want research.

**Mr. Birch-Lindgren (Sweden)** described the field of hospital planning as a widened field for the architect. Three things were necessary to an architect when planning a hospital—knowledge, knowledge and knowledge. If he lacks knowledge of the activities in the hospital, he said, he will be the slave of the doctor or the nurse or the administrator. The architect has to be the leader when making a hospital project. He cannot be the leader without knowledge. There are many ways in which to acquire this knowledge, and one is research. Research is very necessary but it must be employed in such a way that the architect is not a slave having to use a certain standard or a certain type. He must be able to use it in a skilled way, and he cannot do that without knowledge.

Mr. Birch-Lindgren said it was useful to have discussions round a table with doctors and nurses, but much the quicker way to gain knowledge and experience was for the architect to go into the wards where they were working; he would at once be aware of the views of the nurses!

Another method of gaining knowledge was through such conferences as the present conference, but it was impossible to go into detail on such occasions and he drew attention to the practice in the United States of round-table conferences of smaller groups of nurses, doctors and architects. Knowledge could be obtained from the nurses, because if the architect made a mistake the nurse suffered because of it thousands of times. It had been suggested that the nurses must be given the chance to learn the language of the architect—must learn how to read drawings. He once made an exact copy of a sketch given him by a nurse, but when she saw the model she commented, That is not what I meant!

In Sweden, he said, we have post-graduate courses for nurses who want to be matrons and in these courses many hours are devoted to discussions with architects. I have been conducting these discussions for more than twenty-five years and I do not know who has learned most—I or the nurses! It is for the architect to take the initiative in these matters if he wants to devote his time to hospital planning. He should not sit down and wait but should start the studies at once. The more architects there are interested in the hospital field the better it is, because competition will always bring the best results.

Much has been said about economy and the difficulty of getting the money to build hospitals. Some years ago, because we had

done so much in Sweden, I thought there would be no more money for hospitals, but we are now building much more. When people realise what the modern hospital is they will ask for hospitals and the authorities will have to give the money. There will be a demand for hospitals which the authorities cannot resist. I am in no doubt at all that in the long run the authorities will give the necessary money.

If the architect has the knowledge, he has not only to present a project but he has to be convinced that he is right and he has to fight for it. If architects can do that and if they make more propaganda among people for good hospitals, the results will be seen very soon. You cannot find a more interesting field than the hospital field, but you have to acquire knowledge and to co-operate in the right way with all concerned—nurses, doctors, administrators and authorities—to make sure that the result will be a quality job.

**Mr. A. W. Congdon [L]:** who said that he had been an architect in hospital work for over twenty years and a patient in hospitals for three years, commented on what he described as self-contained ward blocks, shut off from daylight, with artificial light, and living on what submarine crews called pickled air. He described the pleasure of the patient who could see the open air through his window and could see night gradually giving way to day. As a matter of principle, before they adopted the blocks with artificial light and air, these matters should be carefully considered.

**Mr. Maxwell C. Tebbitt [A]:** I am a firm believer in competition work for hospitals, as for any other buildings, and I think there is a great opportunity in the hospital field for competition work. A programme must be devised, and surely the architect of the Regional Hospital Board is the architect who should advise on programme arrangements.

Mr. Tebbitt said that Mr. Davies had given them a fine example of the result of a competition. Architects who had won a competition—they had not dealt with hospital work previously but had been awarded medals for entirely different projects—were selected, and the design which Mr. Davies had shown was the outcome. There was a great deal of hidden potential in the profession which would be brought to light by competition, and now was the time to do it.

**Captain Stone:** Since this Conference started, one thought has been running through my mind: we in the hospital world are a pretty dull lot. Now that you have come into contact with hospitals so much, you architects are yourselves becoming dull. There has been too much of a serious strain through almost everything that has been said; you are all taking yourselves too seriously. Pretty well everything said at this Conference was said at the Building Research Conference of 1951; practically everything said then had been said at the congress the year after the war; practically everything

written in hospital journals since the war can be traced from hospital journals in America 20 years ago. We keep talking, and at some time some one has to get something done. Research is all right but it is becoming a bug; we are all getting bitten by it and the sooner we get away from it the better.

We are today nursing patients in wards said to be 100 years old, and no one will tell me that the treatment of the patient in those wards is any worse than the treatment of a patient in an up-to-date ward. I have seen nurses there and in the new hospitals, and there is no difference at all.

Capt. Stone said he had been disappointed that hospital administrators were not represented at the conference. They must remember that there could not be a single patient in a hospital without the hospital administrator. Somebody had to get the finance, buy the supplies and see that the patients were admitted. He hoped that at future conferences there would be representatives of the fourth branch of the hospital world.

He assured the Conference that it was possible to arrange for members of the staff to sign the plans. Each section of the hospital had been called in, with the architect, to discuss the original planning, in the case which he had mentioned. He had not stopped at the matron but had consulted nurses, too. We want the lowest form of nursing life, which is the first-year student life, he said. You get much more information of value to your planning from this source than from the matron or ward sister. The same applies to the kitchen staff. We went to the kitchen maid who peels the potatoes. From this information, the architect and myself prepared our original plan. But we had in mind that the people we had seen had not necessarily all the experience. Their views might not be shared by those who followed them in the future. We applied our common knowledge and experience and where there was any difference of opinion we did not hesitate to go to other hospitals and take outside advice. We gradually got things together so that everyone was happy to sign the final plans.

Dealing with subsequent changes, Captain Stone said that some one at some time had to say, 'No more alterations to the plans'. In this case, he had taken that decision.

Turning to the question of capital expenditure, he asked why hospitals were not permitted to adopt the same procedure as local authorities; if the authorities wanted to build a hospital they could raise a loan and repay it out of the rates, but under the National Health Service a hospital could not raise a loan, for its finances were on a yearly basis.

Generally, there was co-operation from every branch of the hospital service, and where that co-operation was lacking it was generally due to lack of knowledge. There were facilities for nurses to learn about planning and if it were true that they did not understand plans the fault might be theirs. It was true that some administrators

could not read plans, either, but one method of overcoming these problems was to make a cardboard model for everyone to see.

Many questions of detail had been raised, but did it matter whether a hospital was built upwards or outwards, did it matter greatly how many windows there were in a ward, or whether the kitchen was on the ground floor or the top floor? If the hospital was properly ventilated the kitchen could be placed anywhere and there would be no smell.

Modular co-ordination had been mentioned during the Conference, and in a letter to *THE TIMES* Sir Alfred Bossom had written that modular co-ordination would probably be compulsory in America in two or three years and that the estimated saving was up to 5 per cent. This letter had drawn a reply from the Secretary of the Modular Society in England pointing out that standardisation of components had achieved great economies in manufacture but that similar economies in assembly awaited the co-ordination of dimensions between different branches of manufacture.

Captain Stone did not agree that recruitment facilities should influence the design of a ward. You either want a ward of a certain kind or you don't, he said. If you cannot get enough staff it does not alter the design of the ward; you must adopt other recruitment methods and improve the conditions and pay of the nursing staff.

One method was to relieve nurses of some of their duties. In America they had secretaries to relieve the nurse of the necessity of writing as many notes as were written in this country.

Dealing with the importance of the mental well-being of the patient, Captain Stone drew attention to an American system in which the patient was met as he entered the hospital by a charming hostess. He understood that some hospitals in this country now employed a hostess and he was sure that the system would be as successful here as it was in America.

**Mr. R. Llewelyn Davies:** It is quite true that the patient is very frightened, and to overcome that fear involves action on the part of all those concerned with the patient. That includes the consultant, the general practitioner who sent the patient to the consultant, the nurse who handles the patient and, particularly, the person who first receives the patient. Good reception arrangements at a hospital can do a great deal to dissipate that fear. The patient must be given confidence at each changing point in his journey through the hospital.

In the exhibition there was a picture of a children's hospital in Toronto with 647 beds. It was a mammoth building—he doubted whether London, with a population similar to that of Canada, could fill such a hospital—and it would not be surprising if children were frightened by it. If the subject could be treated differently, from the architectural point of view, so much the better.

Miss Turner explained that in talking of

feeding she had said that the serving of food should be left in the hands of the person who cooked it, not the ordering of food. All hospitals should have a dietician at the head of the kitchen. Some hospitals had separate diet kitchens run by a qualified member of the nursing staff, and food from them was taken to patients on special diet, but she thought it desirable in future to have a dietician at the head of the kitchen with all departments under the same head, for even patients not on a special diet needed particular consideration when sick. The ward sister could say, 'I have so many patients on fluid diet', but it was not for her to say what that fluid diet should be; it must have the required number of calories, for instance.

On the subject of food for the homes, she said that an example she had seen in Sweden was where the food was taken from the main hospital to the home. She thought that possibly the main nurses' meals should be in the hospital, where the home was separate, and she believed that the dining rooms and kitchens should be attached to the hospital.

The Chairman, answering the question about the size of teaching hospitals, said the teaching hospital had spread its teaching facilities over so many of the ordinary general hospitals that it was difficult to give an optimum size with any direct relationship to the possibility of training new members of the medical profession.

Mr. Llewelyn Davies answered the questions asking whether hospital staff suffered from working under such artificial conditions as those of the race track plan and whether patients benefited from being able to see Nature through the windows. The questions emphasised the limitations of research, he said. Research could say how many steps would be saved by a certain lay-out and what kind of light and ventilation was provided in rooms of different shape, but it could not enter into a comparison between steps saved and a possible lack or loss of efficiency arising from such factors.

No research could ever take from the architects and their clients the broad responsibility for wise decisions in these matters. It would be a mistake to rely on research to cover these basic human decisions which were the basis of hospital architecture.

He suggested that if the Conference had indicated a necessity to repeat such discussions, they should not be general discussions over a wide field but should follow the type of seminar which was held in America and which had been described by Mr. Birch-Lindgren. In such a seminar people would participate in discussions on limited subjects, such as operating theatres, out-patient departments and wards.

**Professor Vines:** You must take the nurses' health into consideration. You cannot take architectural action to save their steps, while at the same time depriving them of daylight, without seeing whether that has any effect on their health. You can do blood counts. These young women suffer from anaemia more than anything else under those conditions and you cannot do pure architectural research and ignore the nurses' well-being. The hospital medical staff will be only too willing to co-operate with you.

Dr. Davies said he was glad that research could bring to light the effects on health, but he had sought to point out that broad judgements must be taken by medical men and architects, weighing conflicting research data. Research did not produce conclusions on those broad issues.

Sir Arthur Stephenson said that architects needed courage to speak the truth and to see that authority was guided by what they said. The Americans had done more for hospital work than any other people in the world, and we should bear that in mind. He continued: I have never ceased to wonder at the kindly and thoughtful interest of every department in every phase of hospital development throughout that great continent. You have only to see the great developments in the Argentine, Peru,

Greece, Spain, Germany—anywhere on the Continent—to see the thought which the Americans are giving to hospital problems being studied and recorded with the greatest care by those nations. I have spent many weeks in the research departments of the United States Department of Health, and you never hear us criticised; you hear people being sympathetic towards our problems, and a great love for the attitude of this country towards hospitals. He described the Toronto hospital to which Mr. Davies had referred as a happy hospital.

Sir Arthur said we might be timid in calling on mechanical devices and aids which the Americans welcomed. We were timid because we did not know enough about them. We must learn more about the problem.

**Mr. C. G. Stillman [F], Chairman of the R.I.B.A. Hospitals Committee, said that his Committee had striven to stimulate interest in the great and complex problem of hospital building. Many people, particularly younger architects, lacked experience in this field because there had been so little building in post-war years. He hoped that the interest which the Conference had stimulated would not be allowed to fade and that some form of further research and continuous study would follow. Referring to post-graduate studies for architects, he said that he welcomed certain stirrings in this direction which were taking place at the Ministry, such as the issue of bulletins and information for general guidance.**

He expressed the thanks of the Conference to the Chairman, particularly for his constructive and interesting summing up. They were also grateful to Mr. Goldfinch for the work which he had put into the Conference; he had been the producer of the show, as it were. Mr. Stillman also referred to the work done for the Conference by the Hospitals Committee, other committees and the R.I.B.A. staff. Mr. Charles Scott had done much hard work in connection with the exhibition, which had made a useful contribution to the success of the Conference.

## Correspondence

The Editor, R.I.B.A. Journal.

### MATERIALS AND TECHNIQUES

SIR,—In my day we did not write long letters to the JOURNAL on elementary matters of construction but, in my experience, a very fine weather resisting rendering is composed of 1 part slow setting Portland cement, 1 part white hydraulic lime and 6 parts loamy sand, applied to a wall which has been thoroughly wetted, and kept wet during the time of application, and finished with a wooden float.

Let anyone interested take a dry Fletton brick and stand it on end in a saucer of water and note what happens, then lay it frog up on a level surface and pour half a teacupful of water into the frog. Try

it and see, and never again feel astonished to see pointing mortar shrink away from the brick surfaces.

The pointing has been done without wetting the bricks, the dry bricks have sucked the water out of the mortar and reduced the bulk, and sometimes even do not leave enough water for the chemical action of setting to develop.

Yours truly,

G. N. KENT [Retd L.]

### PRESENTATION TO MR. W. J. ELTHAM

SIR,—Mr. William J. Eltham, Registrar of the Polytechnic School of Architecture, has been appointed to the post of Secretary of the Society of Industrial Artists. After 25 years of service to the School, Bill Eltham will be known to a great many old day and evening students who, it is thought, would like to be associated with

us in a presentation which is to be made to him.

I shall be very happy to receive any contributions if they are addressed to me at the School of Architecture, The Polytechnic, Regent Street, W.1.

JOHN S. WALKDEN  
Head of the School

### FRIENDS OF THE A.B.S.

The following letter accompanied a cheque sent by an architect in reply to the President's Christmas Appeal:

'I had already taken my recent promotion as the occasion to place my subscriptions to the Architects' Benevolent Society on a regular basis. I was so taken aback, however, to find from your letter that the Society is overdrawn, that I did not think I could rest over Christmas unless I had done something to help to make things a little more endurable for those in distress.'



The mural painting. The upper illustration shows the left-hand half of the mural

THIS MURAL was painted by Mr. F. R. Huggins [4] on a wall panel 48 ft. long by 7 ft. wide in the restaurant of the club, the subject being a country market-place, suggested by the clients. On account of the length of the picture the chief design problem was that of introducing such variety as would maintain interest throughout its length without undue repetition, and after many preliminary studies the basic idea of the design was settled, which was to have long groups of buildings, all in fairly neutral colours, with the market stalls in stronger colours to form the focal centre of the composition.

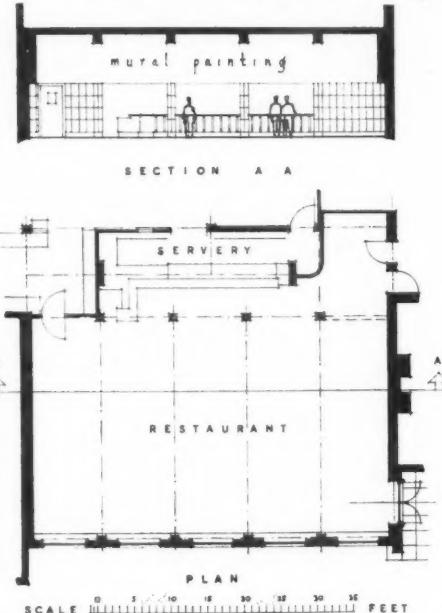
The final design was drawn to 1 in. scale and a number of prints were taken for experiments in colour. These colour roughs indicated that any suggestion of pattern or cloud in the sky would detract from the composition by balancing interest through the height of the picture, and that a warm luminous monochrome would form a better background. It was decided that the painting should be done in oils; 1 in.,  $\frac{1}{2}$  in. and  $\frac{1}{4}$  in. flat brushes were used for laying in the main areas of colour.

The panel was plasterboard with a skimming coat of hard plaster; this was twice primed and then coated with anti-condensation paint stippled to give a 'tooth'. It was finally given two coats of background colour with a dead flat finish. This background colour, which is also that of the sky, is a deep honey colour.

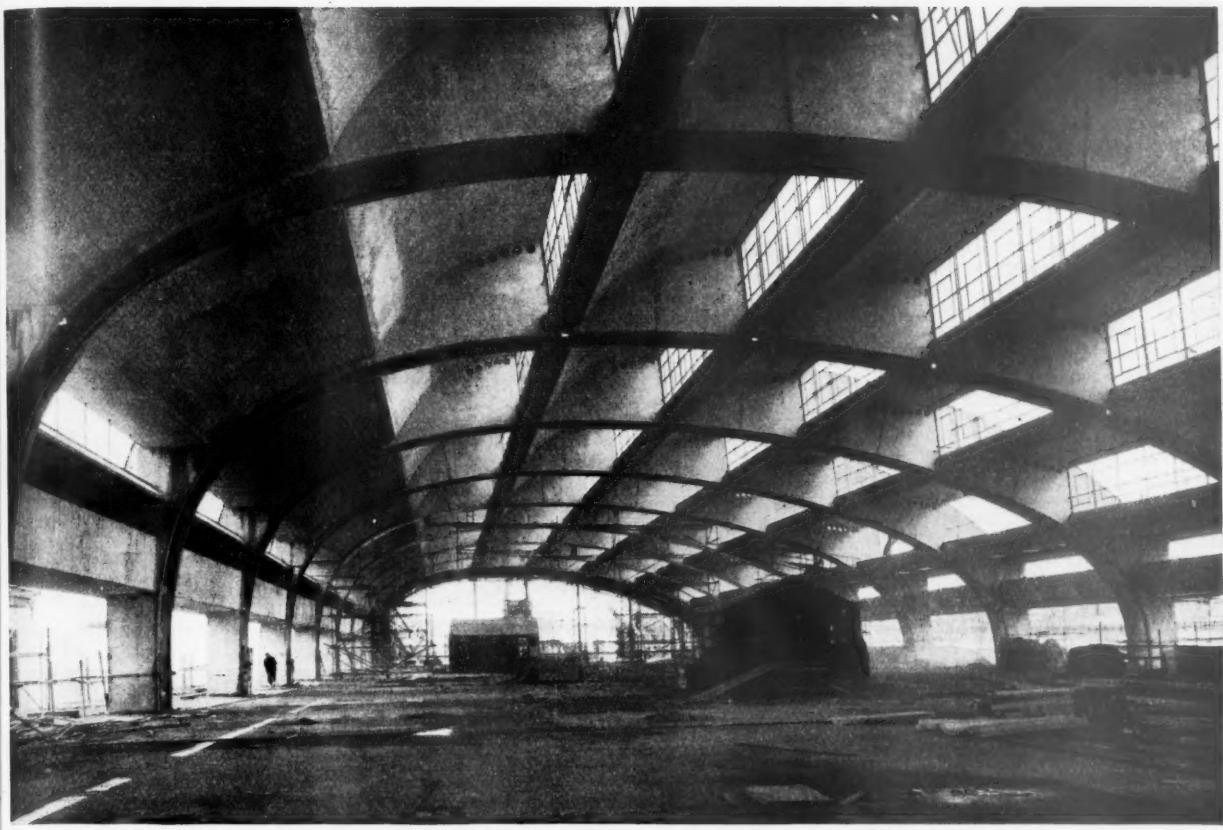
The wall was then squared up in 1 ft. squares, using chalk, and the whole of the painting was lined in, working from the squaring on the 1 in. scale sketch. Adjustments were made and detail which did not

## Mural Painting in the N.A.A.F.I. Club, Chippenham

Architects: Snailum, Huggins and Le Fevre [F/AA]  
Consulting Architect: E. M. Joseph, C.B.E. [F]



tell on the sketch was added. As will be seen from the illustrations, some liberties have been taken with perspective to improve the composition, but no bad effect results since the complete picture is well outside the angle of vision.



The interior of the main printing hall. The profile of the arches is based on a mathematical curve

## New Printing Works for the Bank of England at Debden, Essex

Architects: Easton and Robertson [FF]

WHEN COMPLETED these new buildings will replace the present Bank of England printing works of St. Luke's; they will provide enlarged accommodation and be installed with the most modern plant. The site adjoins the London Transport station at Debden, Essex, and is in an area reserved by the London County Council for industrial development. There will be administrative and general offices, works space for various types of printing, a chemists' section and ancillary works of various types in addition to vaults and stores.

The site is about a quarter of a mile long and about 200 yds. wide and the main building is some 800 ft. long with a maximum width of about 300 ft. A subway will connect the main building to a second building containing the canteen and recreation and committee rooms. The total floor space will be about 443,000 sq. ft.

In the main block the principal printing hall occupies the whole of the north side;

on the south side are the general printing hall, store rooms and a smaller production hall. In addition there are multi-storey buildings on the south elevation and these contain offices, research laboratories, etc. On the east elevation are similar multi-storey blocks above an underground boiler house. The sloping site permitted the forming of an upper ground floor (main hall) and a lower one for plant, etc.

**The Main Hall.** Here the problem was to cover the very large floor space without internal supports and to provide as even an illumination as possible by means of north lighting. It was solved by designing a series of north-light windows rising in staggered steps until they reached a point where further windows would not throw light on the floor, and from this point to the south wall the roof could have been of any shape, so far as north light was concerned, but for aesthetic reasons an arched roof with a smooth curve was desired and



Part of the main hall showing the treatment of the gallery

a mathematical profile was evolved, based on the curves of an equation of the 4th power, rising gently from the north side and sweeping somewhat suddenly to the south side. This results in a roof of unusual but satisfying profile.

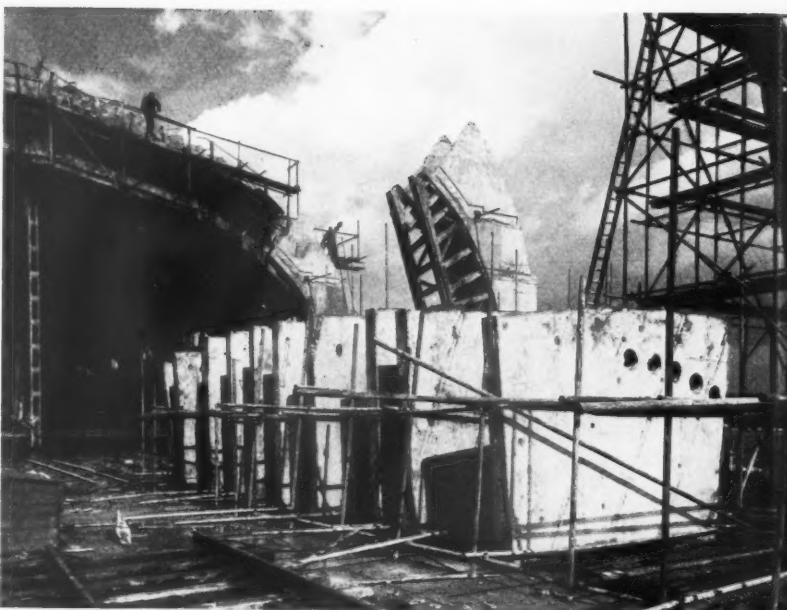
This theoretical conception was carried into effect by dividing the length of the hall into 22 bays, each about 36 ft. long. The bays are terminated at each of their ends by arches, but the end arch of one bay has not been placed immediately next to the end arch of the adjoining bay; instead they are spaced 3 ft. 6 in. apart and this allows the ventilation, heating, electrical and plumbing services to be hidden in the space.

At a height of about 12 ft. above the floor a security gallery runs along each side of the building, and up to the level of the gallery roof the dimensions of the arch legs had to be kept to a minimum for planning reasons; but in the resulting comparatively narrow section the tie force acting at ground level would produce high bending moments, and to reduce this force prestressing was used; this helped to reduce the width required and in consequence the dead load of the arch.

The arches are concrete, the lower part being cast in situ, prestressed as mentioned above. Between the corresponding legs on each side of the building each arch is completed by eleven precast post-tensioned segments, weighing about 5 tons each. The segments were cast on horizontal bed and this allowed the prestressing cables to be laid with accuracy—an important point in members of such slender section; it also allowed an accurate profile and good surface finish to be obtained, since the respective segments could be cast on an identical bed. Between the arches of each bay the roofing is completed in shell construction with in situ concrete.

For speed in erection a special steel gantry was designed for placing the precast units, an accurate profile being ensured by jacking at the main supports. Between the towers of the gantry, shutters were made to act as formwork for the shell roofs and these could be raised and lowered by pulleys and winches, so that when the concrete in each section had hardened and stressing had been completed the shutters and gantry could be lowered and the whole gantry moved along into position for the next bay; the entire process of erecting and lowering taking only a few hours.

**General Printing Hall.** This hall lies between the main hall and the multi-storey block to the south. It was necessary to provide an expansion joint at each side of this roof and therefore it was decided to use a balanced cantilever type of structure, making a complete break with the buildings on each side, and these cantilevers were prestressed to limit the deflection and to lessen the thickness of beam which otherwise would have been required had normal reinforced concrete been employed. The roof consists of four free-standing bays, each bay being made up of four cantilever beams spanned by a series of north-light



Precast concrete arch units for the main printing hall, stacked ready for lifting



The precast north-light shells of the general printing halls, showing the roof of the main hall in the background

shell roofs, and as each shell is about 24 ft. long the bays are 72 ft. long, since each comprises three sets of shell roofs with cantilever supporting beams. The beams are 6 ft. 9 in. deep by 9 in. and 6 in. thick; they are cast in situ and are prestressed on the Gifford-Udall-CCL system by a series of single wires assembled in twelve layers one over the other, each layer of wires being longer than the one below and disposed in such a way that a precise

distribution of stress in each beam could be ensured.

The precast shells are about 1 in. shorter than the space between the beams, in which there is  $\frac{1}{4}$  in. recess. When the shells have been lifted into position the space between their ends and the faces of the beams is packed with mortar, and when everything is in position and the joints mortared the whole roof is prestressed transversely, that is, along the shells and through the beams.

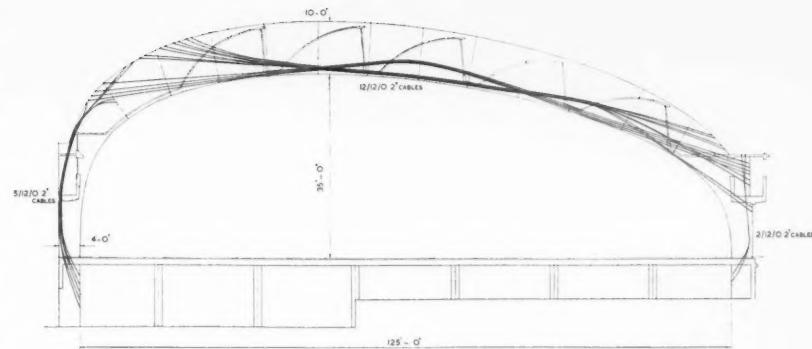
there being six prestressing wires to each shell. After the shells have been prestressed and loading of the beams has thus been provided the beams themselves are also prestressed by working upwards from the shorter wires, layer by layer, until the longer upper wires have been stressed.

In stressing the cantilever beams a technical consideration had to be borne in mind, which was that as stressing proceeded the ends of the beams must be temporarily loaded, otherwise there might be over-stressing of the concrete at the top of the beam in compression, and as the prestressing wires on top of each beam would have to be concreted in, to protect them from weather, this concrete might crack under differential movement and the wires might corrode owing to exposure, as the concrete would not be prestressed in the same way as the rest of the beam. It was therefore decided to load the beams in two stages: first, by loading them sufficiently to ensure that the concrete would not be over-compressed during stressing, and, secondly, to induce deflection in the cantilevers before surrounding the wires with concrete, so that when this concrete had matured the release of the load would result in an upward movement of the cantilever with a consequent compression in the top concrete. All this was effected by a steel rod anchored to the underside of the ends of each cantilever and joined to a short beam bolted to the heavy floor. One side of the short beam was bolted to a plate in the floor and the other side joined to a similar plate by means of single wire prestressing. By prestressing the wire stage by stage, progressive loading could be given to the steel rod and therefore to the beam. In this way loads up to 7 tons were quickly placed on the cantilevers.

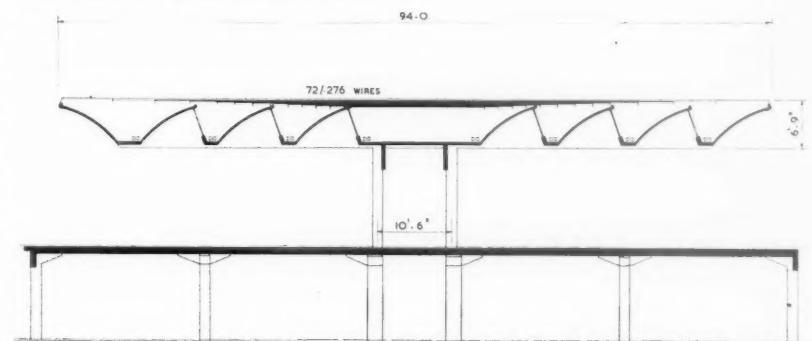
The constructional flooring of the main hall, the general printing hall and the smaller production hall is generally of flat slab type. Under the main hall there are no capitals to the columns, as they could be comparatively closely spaced, giving bay sizes of 18 ft. by 19 ft., and this helped the detailing of the extensive services, but under the floor of the general printing hall the spacing is wider, 24 ft. square, and here bracket capitals have been used.

Considerable use of concrete has been made in the elevational treatment. A number of the main columns are 30 ft. long and these have been precast, as this gave continuous unjointed concrete with a practically flawless finish. And since the columns were cast on the site close supervision was possible, especially in the important matter of weather-covering over the steel.

The specification for the concrete work called for some 15 different mixes and types of concrete, all to be vibrated, and it was therefore decided to install a central batching plant to produce most of the concrete, with two smaller batching plants in remote parts of the site. The central plant had four aggregate hoppers and two cement hoppers dealing with two sorts of cement. A pump and skips travelling on a narrow gauge track delivered the concrete,



Cross section through the main printing hall



Cross section through the general printing hall, showing a balanced cantilever beam



Prestressed balanced cantilever beams in the general printing hall

derricks hoisting the concrete from the skips to the high shell roofs and columns.

Except for the travelling gantry the formwork was designed and made on the site and resin-bonded plywood was mainly used to give the required high quality of finish. For the galleries in the main printing hall a fluted front was designed as a major decorative element and to give a first-class finish teak shuttering was used.

Almost all the in situ concrete was cast

in steel pan formwork. In the case of the main machinery floors, which are 12 in. to 15 in. thick and designed on the mushroom principle, which gives large areas of flat soffit surface, it was possible to fabricate forms on a framework so that they could travel in panels some 24 ft. long, and this ensured the minimum of work in striking and fixing.

The consulting engineers for the structure are Messrs. Ove Arup and Partners.

# The House and Housework\*

By R. G. Bateson, M.A., K. Jean Noble, B.Sc.,  
and J. J. Attenburrow

Experiments on the housewife's use of her house in the performance of routine household tasks

**Introduction.** As part of its research programme the Building Research Station is engaged on a study of the relations between the design and lay-out of dwellings and their usage by occupants. An account<sup>1</sup> has already been published in which an experimental study was made in mock-up replicas of kitchens already existing in some modern flats. In that investigation a small survey of the contents and usage of a number of kitchens preceded the construction of the mock-up kitchens. On completion of the mock-ups housewives, from the original kitchens surveyed, co-operated in subjecting the mock-ups to certain performance tests developed to appraise the adequacy of the design and lay-out. Subsequently new and modified mock-ups incorporating potential improvements were built and also subjected to test by staff and housewives. The conclusions reached are now being applied in new dwellings.

In the present paper a brief account is given of the first stage of a corresponding study extended to a whole house. The general procedure resembles that adopted for the kitchen investigation, but the stage reached is only that prior to the erection of a modified mock-up incorporating possible improvements in design and lay-out.

The study of a whole house presents, of course, a much more complex and difficult problem than did that of the kitchen—particularly in respect of realism. The performance tests appropriate to a house should have regard not only to the housewife and her work routines and tasks but also to the family as a whole. Nevertheless the housewife's behaviour and reactions in regard to housework and management represent a major factor of which account must be taken in design, and for the first part of the study attention has been concentrated on this. The objective for this first stage was to test further the technique developed in the earlier study, and gain some idea of the general work patterns in terms of time and motion and usage of the equipment. The results given below cannot of course be claimed to apply universally; they refer specifically to the ten co-operating housewives and to one house type. But they probably represent general orders of magnitude which are often sufficient to direct attention to matters worthy of further and more representative study by survey and field experiment.

The choice of house type was governed by several considerations. For example, it is an advantage to study a dwelling in which

careful efforts have been made to reduce costs with minimum reduction of amenities. It is also advantageous if examples of the house type can be found near enough to the experimental station to make it feasible for housewives in these houses to co-operate in any experiment. The house type chosen was a three-bedroom terrace house of 889 sq. ft. gross area, 21 ft. 5 in. frontage and plan as in Figs. 3 and 4; it corresponded closely to one of the types recommended in the second supplement to the *Housing Manual 1949, Houses 1952*.

A mock-up of the house (Figs. 1 and 2) was built at the Station's experimental establishment at Boreham Wood, but before equipping and furnishing it and before deciding on the performance tests to apply, a small survey was made of some 20 houses conforming to the type which had been built some 20 miles away. This was combined with a further survey of some 60 houses on an estate very near to the mock-up site, which although not conforming so closely to the house type chosen were local authority dwellings intended to provide somewhat similar accommodation.

The object of the surveys was to gain some idea of the general equipment, furniture and lay-out in the houses visited so that the mock-up could be equipped realistically and acceptably to those housewives likely to co-operate in the tests, and to form an impression of the general weekly work routine of such housewives. Although, as was expected, there were many differences of furnishing, frequency of tasks and methods of working, it was possible to furnish the mock-up acceptably and to plan work routines, representative of actual routines, which seemed to the Station and to the housewives a sufficient test of the dwelling's relevant characteristics. All the subjects had an opportunity of inspecting the mock-up and familiarising themselves with its arrangements before being asked to carry out any task. There were ten subjects involved; two from the same house type as the mock-up and eight from the estate very close to the mock-up site. Although it might be supposed that the group of eight subjects from the houses of a different type to the mock-up would feel rather strange in the mock-up and require time to adjust themselves to the somewhat different house detail, little difference was found between the two groups; this is perhaps to be expected since the equipment was fairly representative and work tasks were very similar.

part in the experiments ranged from 28 to 40 years of age (average 34.7). All except one were the wives of manual workers. All had two or three children ranging in age from 2 to 18 years (average 9.1). During school term-time six of the subjects had one child at home all day, one of these had one extra child and another had two extra children home for lunch. During the test arrangements were made for the under school age children to accompany their mothers and for these children who ate at home to lunch in the mock-up. None of the subjects went out to work.

Eight of the ten families usually ate all their meals in the kitchen, the other two families both had their evening meal in the living room and one of them had tea and sometimes lunch in the living room.

**Experimental Procedure.** When the subject carried out their routine tasks under observation in the mock-up house it was not considered necessary to repeat all the daily tasks when they could be separated from other tasks occurring less frequently. In this way it was possible to telescope the housework for a five-day week into four test periods of about six hours each. The only day studied in its entirety was the wash day, as clothes washing disorganises the normal daily routine.

The subjects were required to carry out the programme laid down for each test day in their own way, using such equipment as they themselves possessed. The test days conformed to each subject's daily routine as far as possible, and they were left entirely to their own devices without interference from the observers. The Station's staff did however make up the number of the family for meals when required and simulated routine callers such as the milkman, grocer, etc., to provide the normal interruptions.

The period studied embraced the five-day week from Monday to Friday, beginning after breakfast and ending at the completion of the evening meal each day. The week-end period was not included because it would have been impossible to simulate correctly the influence of the presence of the rest of the family on the housewife's activities. It assumed that the housewife had the house to herself except for small children, too young to attend school. The subjects brought their young children (if any) with them so that some of the tests took into account the attendance on the children by the mother and the consequent interruptions in her work.

The mock-up house was provided with all the services available in the real house and any additional services or equipment added by the housewife, e.g. sink heater, vacuum cleaner, were provided as in the subject's own home. The furniture and its arrangement was kept constant throughout and was based on that of one of the subjects who lived in the actual house type, and whose general distribution of furniture was very similar to several others in the group surveyed. Observers suitably stationed outside the house replica noted the various actions of the subject and were assisted by

\* Crown Copyright Reserved.

<sup>1</sup> Bateson, R. G., and Whyte, E. A.: 'Kitchen Planning—Experiments in a Working Kitchen in London Flats', *THE BUILDER*, 13 March 1953.

General Information on the Subjects and their Families. The ten subjects who took

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Fig. 1. The kitchen of the mock-up house

automatic devices which recorded movement over the floors,<sup>2</sup> opening of doors, cupboards, etc., and consumption of gas, water and electricity.

In the early stages of experiments of this type it is advantageous to gather a great deal of detail; later one can hope to reduce the kind and amount of detail collected.

**Results.** Some of the more interesting results obtained are set out below. Although times were in fact recorded at 15-second intervals the figures given in the tables have been expressed more realistically to the nearest 5 minutes.

**Distribution of Time in Rooms.** The total time spent in each room is shown in Table I, which gives the average and the range of the ten subjects for the period

<sup>2</sup> Bateson, R. G.: 'A Sensitive Floor for Examining the Movement of Traffic', *JOURNAL OF SCIENTIFIC INSTRUMENTS*, 31, p. 336 (September 1954).



Fig. 2. The living room of the mock-up house

between breakfast and the completion of the evening meal (Monday to Friday).

The distribution of the average of the ten housewives' time throughout the house is set out in more detail in Fig. 3, which gives the time spent in a five-day week on each of the 104 floor zones of about 2 ft. by 3 ft., expressed in minutes and as percentages of the total time. These figures enable one to relate particular items of equipment or furniture to the time associated with them. Some examples are given in Table II. The various items of furniture and equipment may be identified in Fig. 4.

It will be noticed from the ranges in Table I that there was a wide variation in the times of the subjects. These big differences may be accounted for in several ways, such as familiarity with the house, the speed of working, the thoroughness and frequency with which the job is done, family composition and the presence of children. It must be remembered that no

attempt was made to influence the way in which the subjects did their work; they were encouraged to do what they did at home as far as possible. In these respects it is probable that these ranges reflect the sort of variation found in housewives and their work.

Because of these differences it is probably better to think in terms of the percentage distribution of time rather than the actual time when considering the design of the lay-out and equipment in relation to housework. Moreover, as no two women did exactly the same work in detail, results averaged over the ten subjects are more useful; particularly as the times of the majority were within 10 per cent of the mean.

**Time Spent on Housewives' Activities.** The manner in which the time was distributed among the various routine tasks is set out in Table III. As the ranges show, there were often considerable differences among the

	Time in minutes		Approximate time in hours		Percentage of total	
	Average of 10 subjects	Range	Average of 10 subjects	Range	Average of 10 subjects	Range
<i>Room:</i>						
Kitchen .. .. ..	1,325	1,175-1,680	22.1	19.6-28.0	73	57-83
Living room .. .. ..	210	90-455	3.4	1.5-7.6	12	5-24
Store .. .. ..	40	25-70	0.7	0.4-1.1	2	1-3
Hall (including stairs) .. ..	30	15-55	0.5	0.3-0.9	1	—
Whole of ground floor .. ..	1,600	1,140-2,010	26.7	19.0-33.5	88	83-91
Bedroom 1 .. .. ..	60	45-115	1.0	0.7-1.9	3	2-5
Bedroom 2 .. .. ..	60	45-105	1.0	0.7-1.8	3	2-4
Bedroom 3 .. .. ..	35	20-55	0.6	0.4-0.9	2	1-2
Landing .. .. ..	25	15-45	0.4	0.2-0.8	2	1-2
Bath .. .. ..	20	1-45	0.3	0.0-0.7	1	—
W.C. .. .. ..	14	1-30	0.2	0.0-0.5	1	—
Whole of first floor .. ..	215	160-375	3.6	2.5-6.5	12	9-17
Whole house .. .. ..	1,815	1,300-2,385	30.3	21.5-39.8	100	100

Table I. The time spent in each room by a Housewife engaged on all housework in a five-day week

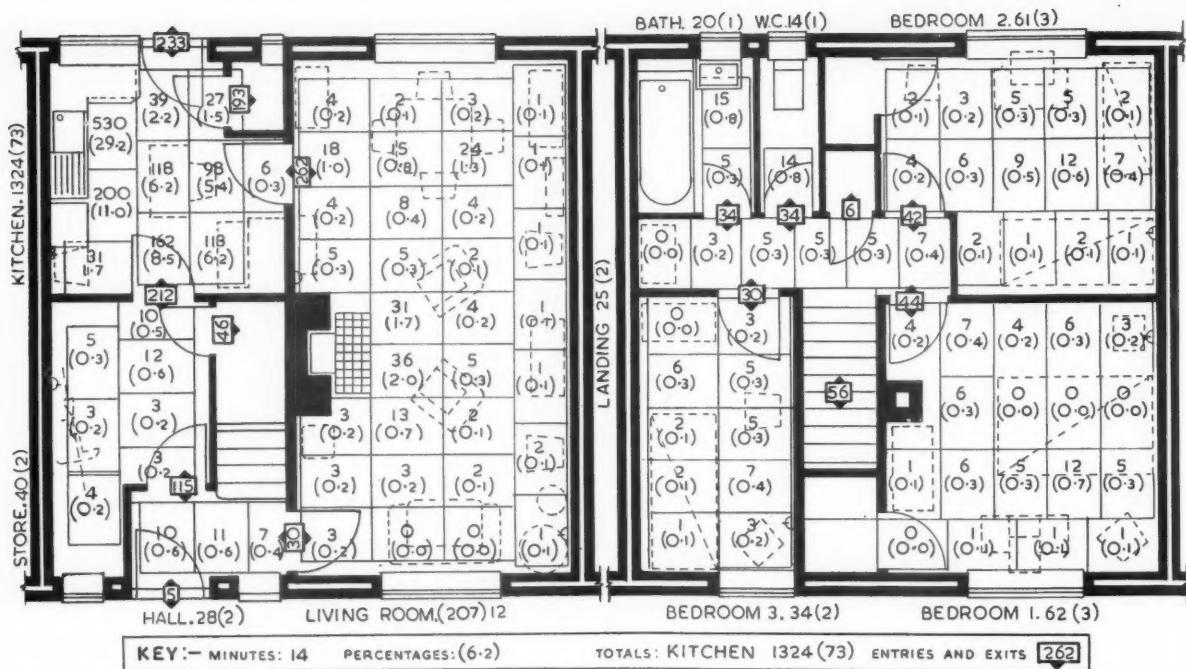


Fig. 3. How the Housewife's time was distributed over the 104 floor zones in five-day week

various subjects; in the cooking, fire-tending and cleaning groups some women took twice as long as others. In the laundering group one woman who had a washing machine at home (and was therefore provided with one for the tests) took only a quarter of the time of the slowest woman who, of course, had no washing machine. In child care, etc., there was a wide range, as would be expected, as during the tests three women had no small children with them, six had one, and one had two for part of the time; also there was a big difference in behaviour, some women fussing over their children and others letting them run about all day on their own. The percentage of each woman's time spent on the cooking group ranged from 44 to 62 and six subjects were within 10 per cent of the mean.

When the subjects had under school age children they generally brought them with them and the time spent on attending to the children has been included under the activity group of child care. It was noticed during the tests that several of the subjects

were continually having to interrupt their work to take the young children upstairs to the W.C. For the six subjects who brought children with them, one-third of the journeys upstairs were for this purpose alone.

**Use of Doorways and Stairs.** The number of times, rounded off to the nearest five, each room was entered and left is given in Table IV. In addition the larder was visited 195 times on average (range: 130 to 345), the large cupboard under the stairs where brooms, mops, vacuum cleaners, etc., were kept was visited 45 times on the average (range: 20 to 65), and there were a few visits to the airing cupboard and the two built-in wardrobes.

During the average time of 30 hours that was spent on routine household duties, the housewives entered or left a room every 2 minutes. The kitchen entries and exits average one every  $\frac{1}{2}$ -minute of the total time spent there, whilst those for the living room occurred every  $1\frac{1}{2}$  minutes. For the store, which was of course largely a through

traffic way, the entries and exits totalled 330 times in the total time of  $\frac{3}{4}$ -hour spent there. The other main traffic way, the landing, was entered and left 240 times in the total time of half-an-hour spent there. Journeys through the back door were mainly visits to the dustbin (140), the fuel bin (20), for clothes drying and wringing (25) and beating carpets (20).

**Duration of Visits to Rooms.** The length of time that the housewife stayed in the kitchen, store and living room on each occasion that the room was visited has been set out in Table V for various intervals of time.

It will be observed that for these three rooms a third of the visits were of less than a quarter of a minute's duration and three-quarters of less than one minute's duration. In the case of the store nearly all the visits were of under a minute's duration. It is therefore understandable, as was found to be the case, that the subjects very rarely closed doors behind them—a fact which may have some bearing on heating, apart from planning considerations. Even in the kitchen, where most meals were eaten and where the preparation and cooking of food might be expected to involve lengthy periods without leaving the room, two-thirds of the periods were under one minute's duration and nearly all under ten minutes. The few long periods were mainly associated with laundering operations.

**Distances travelled.** The distance travelled by housewives in the course of their housework in a five-day week is shown in Table VI.

It is sometimes stated that a woman

Position	Time, minutes	Approximate time, hours	Percentage of total time
By kitchen sink and worktop	.. ..	530	8.8
By cooker and draining board	.. ..	230	3.9
By kitchen cabinet (with folding worktop)	.. ..	115	1.9
In vicinity of living room fire	.. ..	65	1.1
In dining table area in living room	.. ..	45	0.7
Round double bed in bedroom 1	.. ..	45	0.8

Table II. Time spent in certain places in a five-day week. Average of ten subjects

	Time in minutes		Approximate time in hours		Percentage of group total	Percentage of total time
	Average of 10 subjects	Range	Average of 10 subjects	Range	Average of 10 subjects	Average of 10 subjects
<b>Group I. Cooking, etc.:</b>						
Cooking	405	245- 620	6.7	4.1-10.3	39	
Table setting and serving food	145	105- 180	2.4	1.7- 3.0	14	
Eating	220	125- 345	3.7	2.0- 5.7	21	
Washing up	250	135- 430	4.1	2.3- 7.1	24	
Disposal of kitchen waste	10	5- 15	0.2	0.1- 0.3	1	
<b>Cooking Group Total</b>	<b>1,030</b>	<b>760-1,345</b>	<b>17.1</b>	<b>12.7-22.4</b>	<b>100</b>	<b>54</b>
<b>Group II. Cleaning:</b>						
Dusting and tidying	80	25- 140	1.3	0.5- 2.4	27	
Mopping and sweeping	40	5- 85	0.7	0.1- 1.4	14	
Vacuum cleaning	70	45- 180	1.1	0.7- 3.0	24	
Scrubbing floors	25	5- 95	0.4	0.1- 1.6	8	
Polishing furniture	5	1- 25	0.1	0- 0.4	2	
Polishing floors	40	15- 55	0.7	0.3- 0.9	14	
Cleaning brass and windows	5	1- 20	0.1	0- 0.4	1	
Beating and brushing carpets	20	5- 45	0.3	0.1- 0.7	6	
Cleaning bath and basin	15	1- 30	0.2	0- 0.5	4	
<b>Cleaning Group Total</b>	<b>360</b>	<b>200-545</b>	<b>4.9</b>	<b>3.4- 9.0</b>	<b>100</b>	<b>16</b>
<b>Group III. Attention to living room fire:</b>						
Cleaning, tending and laying fire	40	25- 60	0.6	0.5- 1.0	80	
Disposal of ashes	5	1- 5	0.1	0- 0.1	6	
Fetching fuel	5	1- 20	0.1	0- 0.4	14	
<b>Fire Attendance Group Total</b>	<b>50</b>	<b>25-65</b>	<b>0.8</b>	<b>0.4- 1.1</b>	<b>100</b>	<b>2</b>
<b>Group IV. Bedmaking:</b>						
Making beds	90	55- 125	1.4	0.9- 2.1	100	4
<b>Group V. Laundering:</b>						
Collect dirty linen, soak and rinse	105	80- 310	1.8	0.5- 5.2	43	
Fill and empty and attention to wash boiler or machine	20	5- 50	0.3	0.1- 0.8	8	
Loading wash boiler or machine	10	5- 15	0.1	0.1- 0.2	3	
Wringing	20	10- 30	0.3	0.2- 0.5	8	
Drying	45	20- 95	0.8	0.3- 1.5	19	
Ironing	45	25- 75	0.8	0.4- 1.2	19	
<b>Laundering Group Total</b>	<b>245</b>	<b>115-400</b>	<b>4.1</b>	<b>2.0- 6.6</b>	<b>100</b>	<b>13</b>
<b>Group VI. Child care, etc.:</b>						
Child care, personal care, etc.	200	40- 375	3.3	0.6- 6.2	100	11
<b>Total Time</b>	<b>1,900</b>	<b>1,355-2,420</b>	<b>31.6</b>	<b>22.6-40.5</b>	<b>100</b>	<b>100</b>

NOTE: As some of the tasks involved work just outside the house (e.g. hanging up washing to dry) the totals are higher than those given for the house alone (Table I).

Table III. Distribution of the Housewives' time associated with household tasks and activities. Ten subjects. Five-day week

walks miles daily in the course of her house-work. This may be true of very large houses but it was clearly not so for this small compact house, even when women did not organise their work well. Distances covered in a task can be a guide to the efficiency of lay-out and method, but it would appear that in small house design they are not in themselves a factor of importance in relation to fatigue as far as a healthy woman is concerned.

**Miscellaneous.** During the course of the experiment much information was collected which has not been discussed in the fore-

going and is not of a kind suitable for expressing in tabular form. Certain points which may prove of interest are dealt with below.

The thickness lines shown in Fig. 4 indicate the principal routes followed by the subjects; the relative density of traffic is expressed by the width of the lines. Apart from showing the places most frequently visited, the routing is of interest in relation to the influence of furniture and equipment and the positioning and hanging of doors. For instance, in the house tested the kitchen floor space is restricted because all three doors open into this room. The

back door opens on to the larder door and vice versa; when the back door is left open for ventilation the larder door cannot be opened. The fact that the living room door opens into the kitchen against the larder wall determines the route from the living room to the kitchen, mainly to the left on entering. As the door from the store swings towards the cooker when opened it represents a potential danger to the housewife when standing at the cooker. The only possible place for a table was in the centre of the room and this had the effect of a traffic roundabout, making diagonal routes impossible.

Doorway etc.	Number of times used			Percentage of total to nearest one per cent		
	Average of all subjects	Min.	Max.	Average of all subjects	Min.	Max.
Back door .. .. .. .. .. ..	235	130	315	21	16	28
Kitchen-living room .. .. .. .. .. ..	260	75	525	24	10	37
Kitchen-store .. .. .. .. .. ..	210	165	305	19	14	28
Store-hall .. .. .. .. .. ..	115	70	175	11	8	15
Hall-living room .. .. .. .. .. ..	30	2	55	3	0	6
Front door .. .. .. .. .. ..	5	0	15	0	0	1
Stairs (up) .. .. .. .. .. ..	30	15	50	3	1	4
Total for ground floor .. .. .. .. .. ..	885	545	1,435	80	75	88
Bedroom 1 .. .. .. .. .. ..	45	20	95	4	2	5
Bedroom 2 .. .. .. .. .. ..	40	20	85	4	2	6
Bedroom 3 .. .. .. .. .. ..	30	20	40	3	2	5
Bathroom .. .. .. .. .. ..	35	5	65	3	2	6
W.C. .. .. .. .. .. ..	35	10	90	3	1	5
Stairs (down) .. .. .. .. .. ..	30	15	50	3	1	4
Total for first floor .. .. .. .. .. ..	215	115	340	20	14	24
Whole house .. .. .. .. .. ..	1,100	600	1,775	100	—	—

Table IV. The number of times the Housewife passed through doorways or up and down the stairs in the course of her housework in a five-day week

Again, the number of times that the back door was used, mainly to get to the dust-bins and fetch fuel, points to the need for easy access to both. In this house it was intended that the fuel should be kept under the stairs, but the housewives interviewed either kept the fuel in a bin outside the back door or intended to keep it outside as soon as they could. It will be observed too that traffic to the living room fire was rather heavy, even though in the experiment the mock-up house was in a heated laboratory and hot water was provided from an external source. The average number of visits to the fire for all the subjects in the five-day week was 35, i.e. about once an hour of the 30 hours spent on housework. The frequent use of the store as a through traffic way from front to back was very marked; by contrast very little use was made of the living room for this purpose.

The number of visits to the cupboard under the stairs in the store, where the broom, mop, vacuum cleaner, etc., were kept, added appreciably to the use of the space between the doors in the store as a traffic way. In the mock-up and the houses

as built this cupboard was heated by the back of the living room fire and became very warm, making it unsuitable for certain forms of storage, and incidentally absorbing heat which could have been more usefully employed elsewhere. In the original design as recommended by the Ministry of Housing and Local Government provision was made for a broom cupboard in the kitchen. The house tested had no such provision but, as mentioned above, the fuel store was used for this purpose. This meant that for the bulk of the cleaning work it was necessary to pass through a doorway at least twice each time cleaning equipment was required.

It was noticed that the positioning of some electric power points caused certain difficulties in connection with vacuum cleaning, ironing and the use of an electric fire in the kitchen. With the usual length of flex (18 ft. to 21 ft.) provided it was found that the stairs could not be vacuum cleaned in one operation, as when connected to the nearest point upstairs the cleaner would only reach half-way down, and when connected to the socket in the store or the nearest one in the living room the cleaner

could only be taken half-way up the stairs. When ironing on the kitchen table it was necessary to move the table over to the store door as the 6-ft. flex on the iron was otherwise not long enough. The 6-ft. flex on an electric fire could not reach the wall socket on the cooker control unit and if the other socket were used the fire was in a dangerous position.

With the bed position adopted it was necessary to move the bed in bedroom 2 whenever it was desired to insert the vacuum cleaner plug.

**General Discussion.** One cannot of course expect, without further experiment and without more extensive survey, to draw firm conclusions on design *desiderata*, but the study so far has drawn attention either again or for the first time to matters worth consideration by the planner, and it is possible to suggest some ways in which the needs of the housewife might be met. Thus emphasis is again given to the importance of the kitchen where, as in this study, the housewives spend the bulk of their working time (70 per cent). It confirms the importance of giving proper attention to the

Room	Number of times the duration was:—									
	Under 15 sec.	15 sec. to 1 min.	1 min. to 5 min.	5 min. to 10 min.	10 min. to 15 min.	15 min. to 20 min.	20 min. to 30 min.	½ hr. to ½ hr.	½ hr. to 1½ hr.	Total
Kitchen .. ..	125	105	60	30	15	10	5	5	5	360
Store .. ..	90	65	5	—	—	—	—	—	—	160
Living room .. ..	20	85	30	10	5	—	—	—	—	150
All three rooms ..	235	255	95	40	20	10	5	5	5	670
	36%	38%	14%	5%	2%	2%	1%	1%	1%	100%

Table V. Duration of Visits to Rooms. Average of ten Housewives. Five-day week

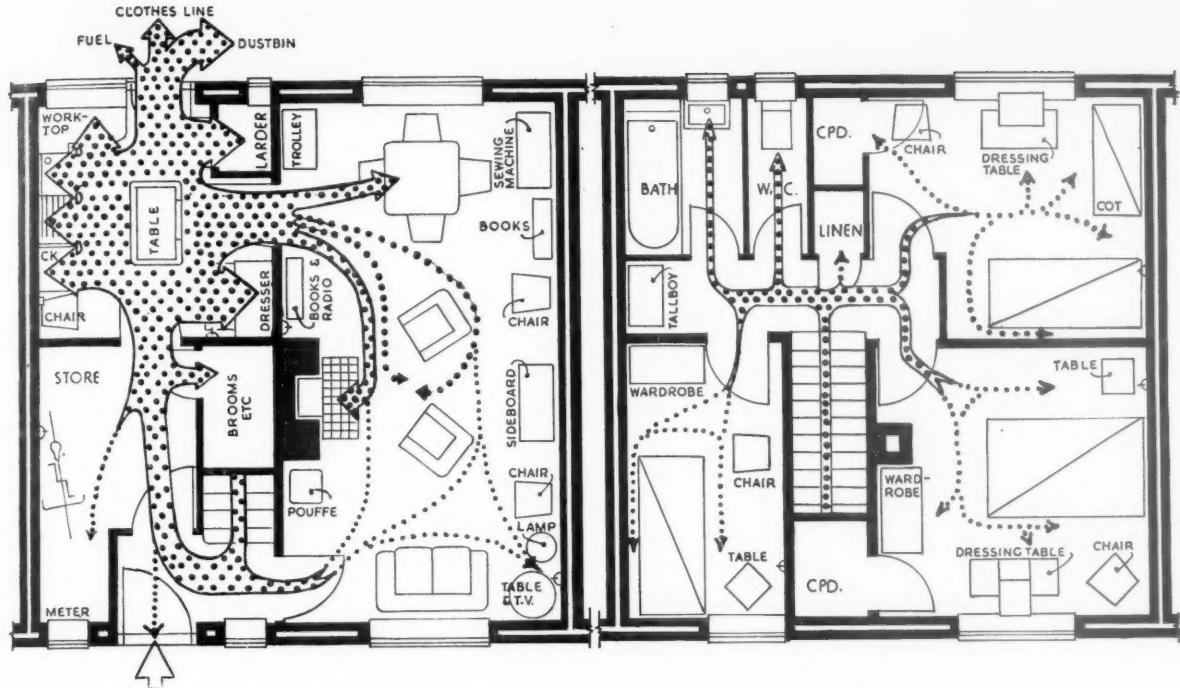


Fig. 4. Dotted thickness of lines showing main traffic routes. Average of ten Housewives, five-day week

lay-out, size, heating, lighting, ventilation, equipment and aspect of this room.

The very frequent use of doorways and the related frequency with which doors are left open emphasises the need for the careful consideration of the number and placing of doors and may provide a possible reason for the complaint that some rooms are not always as warm as might have been expected from the heating equipment installed.

A special feature of the house studied

was the provision of an internal store in place of the more usual external store (outbuilding); this incidentally is a feature of many of the type designs in *Houses 1952*. One function of the store is to serve as a passage way to the back of the house. In the experiment and also in the actual houses the store was in frequent use as a passage way and this reduced its effective area for storage—in practice by about a half. The designer also made provision within this store for a fuel store. Both in this experi-

mental house and in the actual houses built the housewives found this arrangement unacceptable, mainly due to coal dust nuisance.

The problem of the fuel store is important and it is clearly desirable that it should be accessible to both the coalman and housewife and not too remote from any solid fuel appliances in the house. The disposal of ashes and kitchen waste should also be borne in mind.

The frequent use of the stairs (particularly

Room	Distance in yards		Approximate distance in miles		Percentage of total	
	Average of all subjects	Range	Average of all subjects	Range	Average of all subjects	Range
Kitchen .. .. ..	5,035	4,055- 6,435	2.8	2.3-3.6	53	47-59
Living room .. .. ..	1,785	805- 3,230	1.0	0.4-1.8	19	12-24
Store .. .. ..	585	430- 835	0.3	0.2-0.5	6	5-7
Hall (including stairs) ..	300	165- 410	0.2	0.1-0.2	3	2-4
Whole of ground floor ..	7,705	5,515-10,905	4.3	3.1-6.2	81	77-87
Bedroom 1 .. .. ..	610	425- 850	0.3	0.2-0.5	6	4-8
Bedroom 2 .. .. ..	485	325- 720	0.3	0.2-0.4	5	3-7
Bedroom 3 .. .. ..	310	180- 475	0.2	0.1-0.3	3	2-5
Landing .. .. ..	350	185- 630	0.2	0.1-0.4	4	2-5
Bathroom .. .. ..	60	10- 130	0.1	—	1	—
W.C. .. .. ..	40	10- 95	0.0	—	—	—
Whole of first floor .. ..	1,855	1,315- 2,710	1.1	0.8-1.6	19	13-22
Whole house .. .. ..	9,560	6,830-13,615	5.4	3.9-7.8	100	

Table VI. The distance travelled by the Housewife in the course of a five-day week (ten subjects)

when the W.C. is upstairs and young children may have to be taken to the lavatory at intervals) draws attention to the desirability of paying special attention to design, position and lighting. In the house studied the position of the linen cupboard at the head of the stairs was a danger spot as when the door was opened one tended to step backwards down the stairs (some women living in this house type complained of this).

Although this study represents only a

beginning in the factual analysis of user needs in domestic buildings, it has confirmed the value of mock-up studies and has indicated some design features which deserve priority, and it is hoped that it will be of interest to architects and others engaged in housing.

**Acknowledgments.** The acknowledgments of the Station for co-operation and assistance in the experiment are due to the housewives themselves, the Ilford Borough

Council, the builders of the Ilford houses, Messrs. A. E. Whichello Ltd., the National Institute of Houseworkers Ltd., who secured the services of one of their trained domestic workers for preliminary trials, Messrs. D. Meredew Ltd. who loaned furniture and the North Thames Gas Board who loaned equipment.

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## Practice Notes

Edited by Charles Woodward [A]

**IN PARLIAMENT. Building Contracts. Delays in Payment by Government Departments.** The Minister of Works was asked if he was aware that the method often followed by Government Departments of delaying the final and other payments for new building work for a considerable time, added substantially to the cost involved; and if he would consider consulting with the Departments concerned with a view to introducing an arrangement such as was used in the United States of America, where the final payment was generally made within 30 days and a bond accepted to take care of any contingencies which might arise. Mr. Birch stated that the whole question of payments on building contracts, including retention money and the alternative of bonds or guarantees, had recently been considered by an Interdepartmental Working Party set up by his predecessor, and their report would be published shortly. (5 November 1954.)

**Distribution of Industry.** The President of the Board of Trade was asked by what method, in the absence of building licensing, he proposed to carry out the policy of securing a balanced distribution of industry throughout the country. Mr. Strauss said that this would be achieved by appropriate use of the powers conferred by the Distribution of Industry Acts, 1945 and 1950, and Section 14 (4) of the Town and Country Planning Act, 1947, and by advice to industrialists wishing to establish new factories. Mr. Jay went on to ask the Minister if he was quite satisfied that the provision of the Town and Country Planning Act was applicable not merely to the balance of distribution of industry within the locality but to the balance of distribution of industry throughout the country between congested and underemployed areas. Mr. Strauss replied that control of this matter by licensing was replaced by the methods under the Town and Country Planning Act by a decision taken in the life-time of the previous Government and was, he thought, inevitable unless building licensing was to be permanent. (9 November 1954.)

**Building Byelaws.** Asked why under the new model byelaws, all reinforced concrete

columns used in buildings have to be 10 in. square or larger, no matter whether this strength of material is necessary or not; and if he will have this reconsidered so that smaller columns may be used where appropriate, the Minister of Works replied: The model byelaws do not contain such a requirement. It would seem that my Hon. Friend has in mind the requirements relating to fire resistance, which are naturally more exacting. (24 November 1954.)

**MINISTRY OF TRANSPORT. Building and Improvement Lines.** Circular No. 696 issued by the Ministry states that having regard to the powers now available to local authorities as planning authorities for the control of development it is no longer necessary for councils to safeguard future road improvements under the Roads Improvement Act, 1925, or the Public Health Act, 1925. Accordingly the Minister will no longer entertain applications for grants in respect of expenditure incurred by councils in meeting compensation claims payable in consequence of prescribing building or improvement lines.

**BUILDING LICENSING.** The revocation of Defence Regulation 56A took effect from 10 November by an Order in Council. As from that date it will no longer be necessary to obtain a building licence. The Minister of Works, in announcing the Government's decision, said that neither the cost of administering the control nor the inconvenience caused to architects and contractors could any longer be justified.

Control of building will, however, still remain under the Planning Act of 1947. The provisions of Development Plans will regulate a building owner's proposals, and, in the case of an industrial building, unless the Board of Trade issue a certificate that the proposed development can be carried out consistently with the proper distribution of industry, the planning authority cannot entertain the application. There is an exception to this provision where the building or enlargement of a factory does not exceed 5,000 sq. ft. aggregate floor space.

**TOWN PLANNING DECISION. Question of daylighting on Carnforth site—Proposal to erect further houses—Appeal dismissed by Minister.** An appeal against the refusal of the Carnforth U.D.C. to allow the erection of two houses on land at Haws Lane, Carnforth, has been dismissed by the

Minister of Housing and Local Government.

The appeal site lies between No. 43 Haws Lane, the end of a terrace erected in the latter part of the last century, and No. 49, one of a pair of similar houses erected more recently. All the houses have their rear portions partially set back to improve daylighting.

The Minister, in the course of his decision, says he notes that the Council have no objection to the use of the land for housing but that they object to the appellant's proposal on the ground that it would be injurious to the amenity of the occupants of No. 43, owing to the obscuration of daylight by the outbuildings.

The Minister is satisfied that the proposal would result in a serious loss of light to No. 43 and, consequently, he is of the opinion that the Council were right in refusing to grant planning permission. He is satisfied that a more suitable lay-out could be devised and he thinks the best solution might well prove to be to make No. 45 (one of the two properties proposed to be erected) a smaller house with little or no rear projection. In all the circumstances he has decided to dismiss the appeal.

**NATIONAL JOINT COUNCIL FOR THE BUILDING INDUSTRY.** In the JOURNAL for October a decision of the National Joint Council in respect of Tool Allowances for Carpenters and Joiners was referred to. The Council have now issued the following Explanatory Notice in respect of that decision:—

**National Working Rule 3 E (a). Tool Allowance for Carpenters and Joiners.** On 27 August 1954 the National Joint Council promulgated the following amendment to National Working Rule 3 E (a):—

(a) Carpenters and Joiners providing and maintaining all necessary tools as and when required in connection with their work.  
(i) When employed in establishments operating under the Supplementary Rules for Woodworking Factories and Shops, 2d. per day.  
(ii) When employed on other building industry work, 4d. per day.

In view of doubts which have arisen in various parts of the country regarding the application of the Rule as amended, the Council desires to make clear its intentions in making the amendment, which were:—  
(a) that Carpenters and joiners providing

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and maintaining their own tools should have a tool allowance of 4d. per day.

(b) that those operatives in receipt of less than craft rate, working under the provisions of the Supplementary Rules, should retain the tool allowance of 2d. per day.

As from 15 November the increase of tool allowance to carpenter and joiner apprentices is as follows:-

**Tool Allowance—Carpenter and Joiner Apprentices.** *National Working Rule 3 E (d).* At its meeting on 3 November 1954 the Council unanimously made a decision to increase the amount of tool allowance prescribed in respect of carpenter and joiner apprentices. The Council has approved and adopted the following revised wording of National Working Rule 3 E (d) which its decision entails:-

(d) *Apprentices:*

(1) Mason (banker-mason or mason-fixer) and plumber apprentices who are put to the expense of maintaining tools, 2d. per day.  
(2) Carpenter and joiner apprentices who are put to the expense of maintaining tools, 4d. per day.

The National parties having given prior notice, the Procedure Committee hereby promulgates this amended Rule to operate with effect on and from Monday, 15 November 1954.

**PROFESSIONAL DESIGNATION.** The use of the designation 'Chartered Architects' can only be made where each member of the firm is a member of the R.I.B.A. The use of the designation 'Chartered Surveyors' is also restricted unless each member of the firm is a member of the R.I.C.S. Otherwise the correct designation would be 'Architects and Surveyors' after the name of the firm, and then the appropriate description after the name of each partner.

Under the Architects Registration Acts a firm are entitled to describe themselves as architects and surveyors provided that the architectural work is controlled by the architect partner or partners of the firm. The use of the title 'architect' is restricted to those whose names are on the Register.

**OWNERSHIP OF ARCHITECTURAL DRAWINGS AND OTHER DOCUMENTS.** It is many years since it was established in the Courts that when the architect's fees have been paid the drawings must be handed over to the client because they are his property, though the architect has a lien on them pending the payment of the fees. The drawings deliverable to the client are those prepared for the carrying out of the contract.

The specification and Form of Contract also belong to the client together with unpriced Bills of Quantities. The contractor's prices in the Bills are not the client's property. They belong to the contractor. The priced Bills should, strictly speaking, be returned to the contractor in exchange for all drawings and documents supplied to him for the carrying out of the contract.

Neither the architect nor surveyor may withhold contract documents required for the purpose of arbitration or litigation.

The client's ownership of the drawings in no way affects the copyright in them which remains the property of the architect. It may be that in the case of working drawings the client would have an implied licence to use them for the purpose for which they were prepared, but this point has not been before the Court.

#### THE R.I.B.A. SCALE OF CHARGES.

The importance of making the R.I.B.A. Scale of Charges the basis of an architect's employment cannot be too often pointed out, and failure to do so leads to misunderstanding between client and architect. By adopting this procedure the terms of employment and of remuneration are to be found by reference to the Scale, which has thereby become the contract between the parties. The procedure applies in the case of private clients, but employment by corporations or limited companies requires a written agreement. This agreement would, however, refer to the Scale as the basis for remuneration.

Where there is no precise agreement as to the basis of remuneration, then presumably a contract would be implied, as a professional man does not usually intend and cannot normally be expected to give his services free of charge. In such cases the remuneration payable will be what is reasonable for the work done, i.e. *quantum meruit*. The Court, in the event of an action for recovery of fees, would look at the Scale as a guide to reasonable remuneration. Anything said or any act done which is not consistent with an implied contract would be liable to upset the implication. If an architect is asked to prepare a sketch design for approval, then an implied contract would not arise until approval is given. If approval is withheld and the project abandoned, the architect might have some difficulty in claiming any fees. Such a situation could not arise where the Scale is the basis of the contract between client and architect.

## Book Reviews

**Art and Technics,** by Lewis Mumford. 7½ in. v + 162 pp. Oxford U.P. 1952. 15s. This is the most revealing book that Mumford has written; it tells us little of art and technics, but a great deal about its author.

The lectures which it comprises are the academic equivalent of Scott Fitzgerald's *The Crack-Up*. Fitzgerald revealed the crack in himself, but Mumford tells us that the crack is between art and technics—in other words in us. It is a statement of lack of faith. The plea for 'cultural integration', the constant reference to 'departments'—of life—of art—of technics, all points to the Geddes Myth, that a synthesis is a thinking machine of folded paper with a suitable 'department' in each square.

Apparently the Middle Ages were all

right, but the whole of the Renaissance can be written off. After stating a preference for Frank Lloyd Wright and Matthew Nowicki, Mumford airily adds 'now, when subjective expression is overplayed the results are not always happy—any more than was the case in Renaissance buildings, where the idea of axial balance and symmetry determined both plan and elevation'.

Mumford is condescending to modern art (or rather his departments), post-impressions, futurism, cubism and so on. The Modern Movement in architecture is mechanistic and depersonalised, largely as the result of *Towards a New Architecture*. In fact the whole lecture, specifically on architecture, concentrates on attacking Le Corbusier. But what does *Towards a New Architecture* actually say? It does not say 'that seaside houses should look like ocean steamships'; it reviews the means of achieving architecture in Beaux Arts terms: mass, surface, plan; and looks at examples—in Rome—Athens—Istanbul, pointing to their *vitality* and *plastic precision* qualities, which at that time (1923) could not be found in architecture (which therefore did not exist), but could be found in machines. When this *plastic precision* (or lack of arbitrariness) re-entered building, it became architecture once more. Great architecture is not a matter of self-expression, but of inevitability. Organic does not mean bringing the garden into the house; it means rightness, a completely organised, ordered *thing*, like a man or a tree.

This is what the Modern Movement is about, and I'm very sorry that Mr. Mumford cannot see any good in it. He has only to go as far as Marseilles.

PETER SMITHSON [4]

**Sportbauten, &c.,** by Rudolf Ortner (Handbücher zur bau- und raumgestaltung Series). 11½ in. 312 pp. incl. pp. of illus. text illus. Munich: Callwey. 1953. (£4).

Sport buildings! What do they conjure up before your eyes? Coke clinker, asbestos, stained concrete, stained travellers from the north with huge satin rosettes? Then lose *all* your points and turn to page 121. There you will find one football ground like English village cricket, set in parkland, with trees like huge lettuces and another football ground like, well, like nothing we have here, serene and simple, with slanting poplar shadows. These are both German and they are by no means the most distinguished in this book, which is full of examples of settings for sport equal to our dreams of ancient Greece, where sport was a god-like pursuit, divine, not a commercial party for teddy boys.

We renew many old friends and make some new ones among the illustrations, the gentlest from Switzerland, the most human from Scandinavia, the most superb from Germany. There is, of course, nothing to equal the mountain setting of winter sports, but can you doubt that we would soon humanise such scenes ourselves with a few adverts and chip papers?

Sport does arouse all the primary instincts, not excepting brutality, which

emerges sometimes in large stadiums, and frightening ski-jumps. The contrasting elliptical plan curves of stadia have fascinated too many designers, and these were obviously the basis of our own Dome of Discovery, not, alas, used as it should have been, for sport. Diving boards also have too often become a designer's high light and clichés abound. But that sport can and does produce that exquisite fusion of building and landscape, which perhaps only an architect is capable of interpreting, of this we are left in no doubt at all, and the photographs make us want to run and ski and swim and play football, and not just to sit and gape and bet.

For so thorough a book, I think it a pity that the language translations appear in an index at the end and are confined to technical terms only. The first half of the book, which goes into every sort of valuable detail of size and construction for specialised pitches, is hardly comprehensible to the non-German. It has some advantages, such as saving us this sort of redundant verbiage under a picture: 'Bobbahn—bobsleigh course—piste de bobsleigh—pista dibob—pista de bob.' Instead we turn to an index to find this: 'Punching ball—punch bag—punching ball—punching ball—punching ball.' How to be a linguist in five tongues!

One last comment, though this you may already have foreseen: I could find not one British example in the whole book. Is this fair? Not entirely. What could we have sent the publisher, if asked? I would have sent a golf-course, that lovely piece of landscape, man-made but not just an eighteenth-century heritage. A golf-course, but not, I think, the clubhouse.

HERBERT TAYLER [4]

**Treatment and Preservation of Timber.** *Organisation for European Economic Cooperation.* (The Timber industry in the U.S.A. series, iv.) 9½ in. 98 pp. incl. pp. of illus. Paris; Lond.: H.M.S.O. 1953. 6s.

This report by European experts on the methods of the timber industry in the U.S.A. lists seasoning and impregnation techniques, and comments on the efficient handling of timber. It is clearly of greater interest to the industry than to architects.

**Specification 1953.** 55th year. F. R. S. Yorke and Penelope Whiting, eds. 12½ in. Archit. Press. [1953.] £1 10s.

**Specification** is so well known that this new edition needs no detailed introduction; it may be noted that among the sections revised and added to are those on metal windows, high temperature radiant panels, thermal insulation in tropical climates, and Ministry of Education regulations governing the design of schools.

Since the above note was written, *Specification 1954* has appeared. It contains a new section, Structural Aluminium, and revisions have been made to all the other sections to bring them into line with current British Standards and Codes and building by-laws. New developments and important proprietary products are also, of course, included.

**Lancaster House** (St. James's, London). *Ministry of Works guide.* By John Charlton. 7½ in. 13 pp. plans on cover. H.M.S.O. 1954. 1s.

Many, no doubt, regret that this building—earlier Stafford House and originally York House—ceases to accommodate the London Museum, which it did so well from 1912 to 1941. This short history and description as it is now has two plans on the back.

**Essex**, by Nikolaus Pevsner. (The Buildings of England series, B.E. 11.) 7½ in. 440 + 'notes' pp. incl. map + 64 pls. Penguin Books. 1954. 5s.

In this further instalment in the (by now) well-known series, a large county with much architectural variety has been compressed into one (stoutish) volume. The Royal Commission's work, judging from the foreword, has been an embarrassment as well as a help, so numerous are the pre-Georgian buildings. There are nearly twenty fascinating pages on Colchester, which Dr. Pevsner claims has a continuity of architectural interest more impressive than any other town in England. Built at the turn of the century, the church at Great Warley by Harrison Townsend and Reynolds Stephens is a discovery; and as showing current achievement the outline plan of Harlow, its areas lettered by the initials of the architects' names, is useful.

H. V. M. R.

**Birmingham—Fifty Years On**, by Paul S. Cadbury. (Bournville Village Trust.) 10 in. × 8 in. 95 pp. incl. pls. and pp. of illus. Bournville. 1952. 10s. 6d.

Birmingham, on the whole, has been a well-documented and publicised town: witness George Cadbury's *Town planning, with special reference to the Birmingham Schemes* (1915), William Haywood's *Development of Birmingham* (1918), the Birmingham Civic Society's publications (1920's onward), and recently the West Midland Planning Group's *Conurbation* (1948). Following an historical summary, recent achievements and present social conditions are outlined in this volume which, with many plans and sketches, shows the planning projects for the future, especially the inner ring road round the central area. Various 19th- and 20th-century buildings are usefully illustrated in passing.

H. V. M. R.

**Their Name Liveth. Imperial War Graves Commission.** Vol. i. Some pictures of Commonwealth War Cemeteries, etc. 11½ in. × 9½ in. xiii + 32 pp + front. + 64 pls. Methuen. (1954.) 15s.

Any book on this subject cannot fail to be moving and the beauty of the natural surroundings and the architecture intensifies, while uplifting, the impression. Most of the examples illustrated (in spite of the rather misleading sub-title) are in France and Italy, with a smaller number in Belgium and the Netherlands and even Norway, apart from those in Great Britain. The book usefully includes some first-war memorials; founded in 1917, the Com-

mission received a further charter in 1940 to deal with the second. The whole page photographs are well chosen and produced; there is an informative text and a list of trees, shrubs and plants. Architects are sometimes mentioned in the text, though not indexed; places are. Fascinating glimpses of neighbouring old buildings give added interest.

H. V. M. R.

**The Urban Scene**, by Gordon Logie. 10 in. 156 pp. incl. pls. and pp. of illus. text illus. Faber and Faber. 1954. £2 2s.

The production of this book is opportune. In a period when thousands of people rush through Europe in conducted tours and gape, momentarily, at important monuments, it may induce a better appreciation of cities—not for their convenience or smart planning, but for the character of their scenic effect. Mr. Logie finds a relation between towns and human beings. Both develop their character from heredity and environment; and, in towns, heredity is represented by the way of life of its inhabitants, while climate and setting provide the environment. The fusing of these two factors is studied in eight chapters, a little oddly arranged. Some thoughtful notes on pattern and the devices of urbanism—that is, the use of surprise, framing, progression and perspective—are followed by jottings on reflections in water, statues, fountains, the use of paving, the planting of trees and floodlights. Twenty pages on that fundamental matter, the enclosure of space, is illuminated by reference to three Italian cities and two Danish. Nancy is not included.

In a word, the author has tried too much. His short chapter on the landscape of towers, for instance, might be developed into a useful book, though those photographs of Big Ben seem redundant. Yet this is a nice volume to play with. It will make an excellent gift. The 181 photographs are made more intelligible with some plans in the text. If their selection is a little too obvious, most of them have a nostalgic as well as an aesthetic value.

A. S. G. BUTLER [F]

**American Standard Building Code Requirements for Masonry.** U.S. Department of Commerce—National Bureau of Standards. Misc. pubn. 211. 9½ in. vi + 39 pp. text illus. Washington: Supt. of Documents. 1954. (20 c.)

This Standard has been approved by the American Standards Association with the reference number A 41.1—1953. It defines masonry as 'a built-up construction or combination of building units of such materials as clay, shale, concrete, glass, gypsum, or stone, set in mortar; or plain concrete.'

Allowable compressive stresses are set out in a table, and thicknesses and bond are specified. Permissible types of mortar are specified for various kinds of masonry. Although some of the requirements are definite, others are based on performance.

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W. TUTLER [F]

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**The Structural Analysis of the Dome of Discovery, by T. O. Lazarides.** ob. 7½ in. × 9½ in. viii + 64 pp. incl. pls. + folding pl. Crosby Lockwood. 1952. £1 5s.

The significance of this book, for engineering students and consultants, does not lie so much in the structural analysis carried out by the author for one particularly celebrated building. His methods are applicable to any highly redundant space frames.

**The Library Building Plans Institute, Second . . . Proc. of the . . . conference, &c., Donald C. Davidson, editor. Association of College and Reference Libraries. Monographs, No. 10. [With] A college and university library buildings bibliography.** 11 in. × 8½ in. iv + 98 pp. incl. pls. Chicago. 1953. \$2.25.

Six proposed university libraries, and additions to two existing library buildings, were considered last year by a conference of librarians, usually in the presence of the architect concerned, and their meetings are here reported under the title 'Proceedings'. Each case comprises: an introductory statement about the university and the library, estimated numbers of readers and of books, and many other things which a librarian should tell his architect; a short presentation of the plans by the librarian; a transcript of the critical remarks and discussion; and finally reproductions of the floor plans.

The plans of the eight buildings are in all stages from preliminary to final proposals, and the comments vary from detailed fault-finding to agreement about general principles. As a rule, emphasis is laid on one or two points, so that in the course of the book many problems are raised (but not all are settled), from catalogue space and staff economy to air-conditioning and modular planning.

There is a bibliography of college and university libraries built in the United States between 1945 and 1953.

Architects whose clients have special requirements will be much interested by these discussions, and for those who have to design libraries the information will be of great value.

M. W.

**Daylight. Its Nature, Therapeutic Properties, Measurement and Legal Protection, by John Swarbrick.** 9½ in. xiv + 65 pp. incl. pls. + (3) folding pls. Batsford; Wykeham Press. 1953. £1.

Enjoying, as it does, the professional blessings of Lord Horder, Sir William Holford, Professor Corfiato and Dr. C. Roland Woods, one may reasonably say that this little book hardly needs further introduction. It explains, as simply as is probably practical, the nature and therapeutic properties of daylight, the author's methods of daylight measurement, the penetration of sunlight and the legal questions liable to arise through infringement of rights of light. Appendices deal with the Cosine Law and the mathematical explanation of the method of measuring light (by A. C. Stevenson). A glossary is included.

J. C. P.

**Theory and Practice of Structural Design applied to Reinforced Concrete, by B. Eriksen.** (Concrete series.) 9 in. vi + 401 pp. text illus. Concrete Pubns. 1953. £1 5s.

This is a straightforward, practical book, written to guide the student along the rather formidable path which leads from the elementary principles of statics to the analysis of highly-redundant indeterminate structures. The author's aim is to provide essential information, to avoid unnecessary calculations and, when no formulae exist, to solve problems semi-graphically with enough accuracy for normal purposes.

**Design For Modern Merchandising. Stores. Shopping Centres. Showrooms. Architectural Record.** 11½ in. × 8½ in. vii + 247 pp. incl. pp. of illus. text illus. Dodge Corp. 1954. \$8.95.

This book consists of a series of articles and illustrations of work originally published between 1948 and 1953 in the ARCHITECTURAL RECORD. It cannot, therefore, be regarded as a text-book on departmental store or shop planning and design, but rather as a symposium on the subject illustrating American post-war examples and trends.

Approximately a third of the book is devoted to 'Shopping Centres', a new type of departmental store now being built on the outskirts of towns. This development has been brought about by the increase of the suburban population and its spending power, lack of suitable sites in central areas, ease of access for the large number of automobile owners and, arising out of the last fact, traffic congestion in the towns. The lower cost of the suburban land permits spacious layouts with stores normally of two storeys only and three-quarters of the site area allocated to car parking. The layout of this section and its text is by far the most considered and homogeneous part of the book.

The remainder, which will be of more interest to British readers, consists of illustrations of various types of small shops, stores and showrooms including shopfronts, interiors, display and sales fittings accompanied by short descriptions of the works.

There is little reference to construction or services, but it is of interest that there would appear to be far less fluorescent lighting than tungsten in the interiors illustrated. Lighting schemes and ceiling treatments both appear to be much cleaner and simpler as the result.

The photographs and illustrations are of a very high standard as also, in most cases, are the designs illustrated, and the book is well worth studying by anyone interested in departmental store or shop design, planning and equipment or interior design generally.

A. R. LAING [4]

**School Design and Construction, by J. A. Godfrey and R. Castle Cleary.** 8½ in. 373 pp. incl. pls. and pp. of illus. text plans Architl. Press. 1953. £1 16s.

This book is a *sine qua non* for all who are interested in the design and construction of schools. The authors state that they have attempted to collate and sift the vast amount of largely unrelated material available, and they have succeeded in this difficult task in the space of 365 pages of text, together with some excellent photographs and clear plans. This, then, is not a book for bedside reading, but should be used as a ready reference, as it breaks down each type of school into its component parts, and discusses each part from the point of view of function, lighting, heating, acoustics, furniture, etc.

The danger in publishing a book of this kind is that it can so easily become out of date; for instance, the building regulations quoted have already been amended, but there is much information of long-term validity.

The most interesting section of the book to the general reader consists of the historical review, showing the development of the school plan from the London School Board 'three deckers', through the finger type plans influenced by ideas on daylighting and cross ventilation, back to the more compact type of plans which are in vogue to-day. As the authors state, 'the swing of the pendulum in the direction of dispersal and sprawl has now more or less ceased, and the return journey has begun. It looks at present as though the pendulum will come to rest somewhere in the middle between the two extremes of undue compactness and excessive sprawl'. To the outside observer the extent of the change in outlook in the short space of time since the war has been considerable, and the more sceptical might perhaps be forgiven if he wondered whether equally drastic changes were likely to take place in the near future.

The school plans in the recent past have been based very largely on the building regulations issued by the Ministry and, because the comprehensiveness of the 1945 Regulations and the Explanatory Memorandum somewhat defeated their own purpose, the 1954 Regulations have been made deliberately more vague, in order to encourage more imagination in fulfilling the basic requirements. One cannot help feeling, however, that the changes of outlook towards the planning of schools have been occasioned by an undue emphasis upon a particular factor at any one time—whether it be cross ventilation, daylighting, compactness of planning in order to save costs, or even such details as the spacing of hat and coat pegs. Other factors which have left their mark have been shortages of materials such as steel and timber, but let us now hope that conditions are becoming more stable, and that planning policy will not show quite such violent fluctuations in the future.

One particular merit of this publication for the busy school architect is the carefully prepared index and list of reference books, pamphlets, etc., which amplify the detail given.

HOWARD LOBB [F]

# Review of Construction and Materials

*This section gives technical and general information. The following bodies deal with specialised branches of research and will willingly answer inquiries.*

*The Director, The Building Research Station, Garston, near Watford, Herts.*

*Telephone: Garston 2246.*

*The Officer-in-charge, The Building Research Station Scottish Laboratory, Thorntonhall, near Glasgow.*

*Telephone: Bushy 1171.*

*The Director, The Forest Products Research Laboratory, Princes Risborough, Bucks.*

*Telephone: Princes Risborough 101.*

*The Director, The British Standards Institution, 2 Park Street, London, W.1.*

*Telephone: Mayfair 9000.*

*The Director, The Building Centre, 26 Store Street, Tottenham Court Road, London, W.C.1.*

*Telephone: Museum 5400 (10 lines).*

*The Director, The Scottish Building Centre, 425-7 Sauchiehall Street, Glasgow, C.2.*

*Telephone: Douglas 0372.*

**Prefatile Roofing Tiles.** Although there may be some preference on aesthetic grounds for covering a sloping roof with tiles or certain varieties of slates, it is a fact that the minimum pitch required needs more roof framing than would be necessary if the pitch were flatter, as it can be with some other materials. Further, in certain forms of roofing there is a danger of moisture penetrating through the fixing holes. These considerations occupied the mind of an Austrian plumber some ten years ago and he invented a system which took him seven years to perfect, and for the last three years or so it has been used in Austria and Germany.

One of the main advantages of his system is that the pitch of the roof need not be more than nine degrees and no fixing holes are needed. This is effected by using aluminium tiles with the upper edges folded over, that is, towards the outside face, and the lower edges turned under. For fixing, two clips per tile are tucked into the top fold and are then bent and nailed to the upper face of the battens, which should be set at 18-in. centres. Other sub-bases can also be used. The under-fold of the next tile upwards is then tucked into the over-fold of the first tile, covering the tacks. The tiles have three main corrugations with two auxiliary ribs between each corrugation for the sake of maximum stiffness.

Adjoining tiles in the same course have their side laps carried over the adjacent corrugations and tucked into the upper and lower folds.

Special types of tiles are used for eaves and ridge courses, while verges, hips, junctions with rising walls and valleys are formed by trimming the tiles with ordinary tinsmith's snips, the edges being bent up to form about 1 in. upstand. Ridge and hip pieces have an interlocking joint which accommodates the upstand and flashing can be done with soft aluminium strip, much in the usual way.

The claims for this system of roofing, to which the name Prefatile has been given, are—prevention of capillary leakage while still allowing the roof to breathe; a degree of insulation given by the reflectivity and low emissivity of aluminium, while additional insulation can be easily provided; pitch can be as low as nine degrees, with a saving in the overall weight of the roof; and the saving in man-hours on account of the ease of fixing and lightness in handling. The system withstands any tendency to stripping under high winds.

Technical details: three Prefatiles and six fixing clips complete 1 sq. yd. of roofing; superimposed load of 40 lb. per sq. ft. without undue deflection, if in 24 s.w.g. material; weight per sq. yd. in 24 gauge about 4 lb. The tiles can be supplied with

a 'stucco' finish for the 24 s.w.g. material and other forms of special surface finish are available at low extra cost.

The marketing rights of Prefatile are vested in Messrs. Prefatile (G.B.) Ltd., of 78 Buckingham Gate, London, S.W.1.

**Asbestolux Curtain Walling.** The Cap Asbestos Company Ltd. have issued a guide to the use of their Asbestolux panels in curtain wall construction, illustrated with drawings of (1) double skin units, in which external and internal skins of Asbestolux closely enclose Rocksil slabs; (2) separate skin construction, comprising Rocksil slabs supported as the central core of a cavity construction enclosed externally and internally by Asbestolux, and (3) units formed with vitreous enamelled steel trays filled with Rocksil slabs and finished internally with Asbestolux. In the first two systems the external Asbestolux sheets have a weather resistant applied finish. Notes on the sizes of units, recommended thicknesses, weight, strength, U-values and so on, give the kind of information an architect wants, especially as they include an idea of the cost of the respective materials, based on an area of medium size.

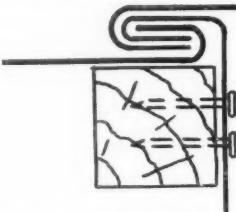
Interesting information is given on condensation control, pointing out that vapour pressure flow is generally from inside to outside and that it is desirable to prevent moisture vapour from penetrating to the cavity behind the internal sheet, wherefore a barrier should be placed immediately behind that sheet, but as vapour barriers are seldom completely effective, provision should be made to let vapour pressure escape outwards from the cavity in case where the construction prevents vapour from passing through the external skin. For those who like to know the scientific definitions that lie behind performance it may be stated that the term 'vapour barrier' is taken to represent a membrane with a diffusance of less than 0.50 grammes per 24 hours per square metre per mm. mercury vapour pressure.

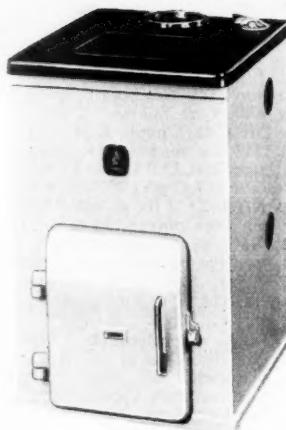
**Extruded Lead Pipe.** As extruded lead pipe has been used in the building industry for more than 150 years it is not surprising that during that period a very wide range of sizes and weights has been produced to meet different and changing demands. Most of these types have been kept in stock but it is now apparent that many are no longer in frequent demand. Manufacturers have therefore made a comprehensive review and have drawn up a range that should meet all normal requirements for



Fixing Prefatiles on a low pitched roof

Method of holding Prefatiles in place by clips fixed to tiling battens. (The illustration is not to scale and is not to the actual slope of the roof)





The Tayco Royal domestic boiler

different classes of building; indeed it is larger than is demanded by the general run of needs. Sizes and weights not included in the list can be supplied to special order.

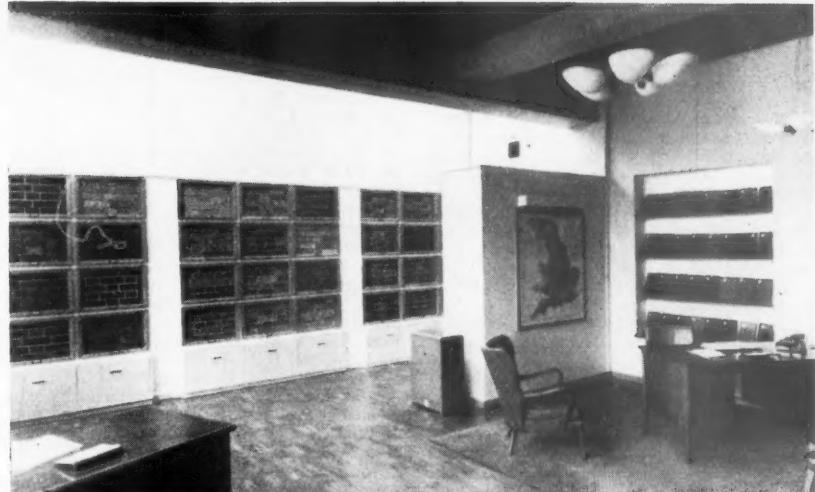
The range includes 15 nominal internal diameters, from  $\frac{1}{2}$  in. to 6 in., each being made in a number of weights. The Lead Sheet and Pipe Council (Eagle House, Jermyn Street, London, S.W.1), announce a booklet, *Concise Information on Lead Sheet and Lead Pipe*, which sets out this table of standard bores and weights of lead and lead alloy pipes, with wall thicknesses and external diameters. Copies may be had on application to the Council.

**The Tayco Royal Domestic Boiler.** From inspection of the latest products of manufacturers it is apparent that simplification has been their aim; simplification, that is, from the user's point of view, although it may call for the inclusion of somewhat complicated apparatus. In the case of domestic boilers it is no longer necessary to watch the fire and to pull out or push in dampers; a turn of the thermostatic control handle is all that is necessary.

One of the latest additions to this class of boiler is the Tayco Royal, made by Messrs. Robert Taylor and Company (Ironfounders) Ltd., of 66 Victoria Street, London, S.W.1. The thermostatic control handle is placed in a corner on top of the boiler and so can be reached easily, and the fire can be raked without having to open the fire-door, as a slot in the door allows the raking tool to be pushed through it; this stops dust getting into the room. Behind the fire-door there is a chute-door which prevents the fire spilling out when clinkers are removed.

The makers claim that the automatic control system is very sensitive to changes in the temperature of the hot water, so that the fire brightens up very quickly when hot water is drawn off.

Technical details: height, approximately 23 in.; width, 15½ in.; depth, 18½ in. overall; rating 25,000 B.t.u. per hour; heating capacity, 35-45 gallons hot water cylinder and one towel rail, or 30 gallons cylinder and one radiator and one towel rail, or



A corner of Messrs. Broad's facing brick showroom

75 sq. ft. of radiation surface for heating only; finishes, cream and black, or grey mottled and black, vitreous enamel; present prices, £23 10s. 0d. in cream and black, £22 15s. 0d. in grey mottled finish; fuels, coke, coal, anthracite and manufactured fuels. Provision is made for a gas poker.

**A Facing Brick Showroom.** In their premises at 4 South Wharf, Paddington, London, W.2, Messrs. Broad and Company Ltd. have recently set up a showroom in which many samples of facing bricks are displayed in wood panels each of the same size and of a light colour that does not clash with that of the bricks. The panels hold some five courses, the mortar joints being represented by felt strips. The showroom was designed by John Grey and Partner [F].

It requires some degree of experienced imagination to visualise what the appearance will be of an expanse of wall by looking at one or two sample bricks, laid side by side or on top of one another without anything to give the effect of the mortar joint, which by its colour can go far to enhance or mar the general result, and therefore Messrs. Broad's reasonably-sized made-up panels are to be welcomed. In this showroom architects can choose the brick that most nearly carries out their intentions and they can, of course, consult with the showroom staff, especially on the important point of probable delivery dates.

As the accompanying illustration shows, the display also includes samples of roofing tiles.

**Rocksil.** If buildings and their contained water services and appliances are not provided with thermal insulation it is not because of lack of appropriate materials; it is most often due to the short-sighted policy of someone who boggles at spending a few extra pounds and takes little thought of the financial morrow; thinking, perhaps, that a pound in the pocket is worth two in the frost.

One thermal insulating material is

'Lightly-bonded Rocksil', which is a mineral wool made from naturally-occurring rock by melting and extruding into filaments, the process producing a fleecy mass of fibres of very low density. It is called 'Lightly-bonded' because the fibres are lightly bonded together with a synthetic material that binds the fibres sufficiently to form a mat that can easily be handled and cut with scissors. For convenience the mat is backed with paper, but this can be removed if necessary.

Technical details: supplied in rolls 10 yd. long and 36 in. wide and of nominal thicknesses  $\frac{1}{2}$  in.,  $1\frac{1}{2}$  in. and  $1\frac{1}{2}$  in. Thermal conductivity,  $k$ , 0.25. Sound absorption coefficient averages 0.95 over a long range of frequencies. It does not smell, is non-hygroscopic, is proof against rot and fungus, is completely fire-resistant, and will withstand temperatures up to 1,400° F. It is marketed by Messrs. William Kenyon and Sons Ltd., of Dukinfield, Cheshire.

**Avoidable Defects in Drainage Systems.** Under this title the D.S.I.R. have issued a pamphlet of recommendations following a survey carried out by the B.R.S. on domestic drainage systems. Blockages in domestic drainage systems cost local authorities £100,000 a year to clear. The chief points in the recommendations are as follows: most blockages occur at intercepting traps, manholes, bends and junctions. Unnecessary bends increase the danger of blockage. Pipes can be too large in section, which should be such as to ensure that there is depth of flow enough to keep the pipes clear.

Rendering manholes was found to lead to trouble when the rendering fell and blocked the inverts. Badly-made joints, in which mortar is forced through into the pipe and forms an obstruction, can cause waste material to build up and block the pipe. Straight pipes used to form large radius curves can lead to trouble as the gap between the pipe faces which is formed at the outer angle of each joint tends to collect material which eventually causes a blockage.

# Notes and Notices

## NOTICES

**Third General Meeting, Tuesday 4 January 1955 at 6 p.m.** The Third General Meeting of the Session 1954-55 will be held on Tuesday 4 January 1955 at 6 p.m. for the following purposes:-

To read the Minutes of the Second General Meeting held on 7 December 1954; formally to admit new members attending for the first time since their election.

To read the Council's Deed of Award of Prizes and Studentships 1955.

Mr. E. Maxwell Fry, C.B.E. [F], to read a paper on 'Chandigarh: The Capital of the Punjab'.

(Light refreshments will be provided before the meeting.)

**Fourth General Meeting, Tuesday 1 February 1955 at 6 p.m.** The Fourth General Meeting of the Session 1954-55 will be held on Tuesday 1 February 1955 at 6 p.m. for the following purposes:-

To read the Minutes of the Third General Meeting held on 4 January 1955.

The President, Mr. C. H. Aslin, C.B.E., to deliver an address to architectural students and present the Medals and Prizes 1955.

Mr. Raymond C. Erith [F] to read a criticism of the designs and drawings submitted for the Prizes and Studentships 1955.

(Light refreshments will be provided before the meeting.)

**Session 1954-1955. Minutes II.** At the Second General Meeting of the Session, 1954-1955, held on Tuesday 7 December 1954, at 6 p.m., Mr. C. H. Aslin, C.B.E., President, in the Chair.

The meeting was attended by about 150 members and guests.

The Minutes of the Inaugural General Meeting held on Tuesday 2 November 1954 having been published in the JOURNAL, were taken as read, confirmed and signed as correct.

The following members attending for the first time since their election were formally admitted by the President: *As Fellows*: A. E.

### British Architects' Conference, Harrogate, 8 to 11 June 1955.

#### LIST OF HOTELS

Hotel	Address	Total No. of Guests	Bed and Breakfast	Garage
*Majestic ..	Ripon Road	300	27/6 to 32/6	Yes
Cairn Hydro ..	Ripon Road	240	21/-	Yes
*The Old Swan ..	Swan Road	250	25/-	Yes
*Prince of Wales ..	West Park	210	21/6 to 30/6	Yes
*Adelphi ..	Cold Bath Road	100	17/6	Yes
Beechwood Court ..	Cold Bath Road	100	15/6	
Grange ..	West Stray	100	14/6 to 21/-	Lock-ups
*Prospect ..	Prospect Place	150	22/6 to 27/6	Adjoining
*St. George ..	Ripon Road	120	25/- to 30/-	Yes
Cecil ..	Valley Drive	80	25/- (incl. dinner)	No
Claremont ..	Victoria Avenue	80	24/- (full board)	No
Dirlton ..	Ripon Road	80	14/-	No
Green Park ..	Valley Drive	80	17/6 to 19/6	Nearby
Kensington ..	Valley Drive	50	15/- to 16/6	No
Kirkbyde ..	St. Mary's Walk	60-70	14/6 to 16/6	No
Langham ..	Valley Drive	80	17/6	Nearby
*North Eastern ..	Station Square	50	18/6	No
Russell ..	Valley Drive	80	17/6 to 18/6	Nearby
Valley Gardens ..	Valley Drive	70	16/6 to 18/6	No
Berkley ..	35 Victoria Avenue	25	15/-	No
Boston ..	Swan Road	30	14/6	No
Metropole ..	Valley Drive	32	17/6	No
Mount Edgcumbe ..	103-105 Valley Drive	30	16/6	No
Octagon ..	Valley Drive	40	16/6	Nearby
Regal ..	Oxford Street	30	15/-	No
Ridings ..	Springfield Avenue	25	21/- (full board)	Yes
Riversdale ..	17-19 Valley Drive	28	16/6 to 17/6	Nearby
Studley ..	Swan Road	28	25/-	Nearby

In addition to the above a complete list of hotels, boarding houses, etc., may be obtained from W. W. Baxter, Information Bureau, Harrogate.

\* Licensed.

On p. 249 the entry Higginson: Frank Robert Stephen, should read Higginson: Frank Robert Stephen.

On p. 441 the address of Robert Sydney Shaw [A] should read 132A High Street, Southampton (Tel. No. Southampton 21015), and the affixes as follows: V.R.D., DIP.ARCH., DIP.C.D.(L'pool), A.M.T.P.I.

On p. 548 the telephone number of Mr. William James Fitt, O.B.E.(Ret.F), is incorrect and should be as follows: WINTON 820.

On pp. 603 and 651 the names of the following Students were omitted in error: JOHRI: Narendra Swarup, 15 Mall Avenue, Lucknow, U.P., India (Elected 1950), and WILSON: Charles Jeremy, Princeland, Coupar Angus, Perthshire (Elected 15th June 1954).

The R.I.B.A. Appointments Department. Members and Students of the R.I.B.A. and the Allied Societies are reminded that the services of the Institute's Appointments Department are available to employers requiring assistants and to assistants seeking salaried employment.

Employers are invited to notify the Secretary of vacancies in their offices, giving details of the work to be done, the qualifications required, and salaries offered.

Assistants should preferably call at the offices of the Appointments Department, but if this is not practicable they should obtain from the Secretary an application form, which when completed and returned to the Institute will enable the Department either to send the applicants particulars of vacancies suitable to their qualifications and requirements or submit their names for vacant posts.

Members and Students seeking official appointments should note that normally these are fully advertised in the weekly professional press, and that therefore the Appointments Department do not as a rule notify them to those on the register.

The Institute will also be glad to advise on most matters concerning architectural employment, including overseas appointments.

**Associates and the Fellowship.** Associates who are eligible and desirous of transferring to the Fellowship are reminded that if they wish to take advantage of the next available election they should send the necessary nomination forms to the Secretary, R.I.B.A., as soon as possible.

**R.I.B.A. Award for Distinction in Town Planning.** The R.I.B.A. Award for Distinction in Town Planning is the only award in town and country planning bestowed by the R.I.B.A. It is by conferment only and is limited to Fellows, Associates and Licentiates of the R.I.B.A. Outstanding work in the design and layout, not of individual buildings, but of groups of buildings will be recognised. The award will be made for actual planning work and while not primarily intended for housing layouts, such layouts of groups of buildings would not be excluded.

Recommendations are submitted to the Council by a Standing Committee set up for the purpose. Personal applications by candidates will not be entertained; the name of a candidate must be submitted by three or more sponsors, themselves members of the R.I.B.A., who will be required to submit details of the candidate's professional qualifications and experience and evidence of the candidate's actual planning work. Nominations may be made twice annually, on 1 March and 1 November, and must be addressed to the Secretary, R.I.B.A., 66 Portland Place, London, W.1.

Members upon whom the award has been conferred will be entitled to use the designation

'R.I.B.A. Award for Distinction in Town Planning' and it is advised that this should be used in full, or the initials 'Dist. T.P.' after the initials 'F.R.I.B.A.', 'A.R.I.B.A.', or 'L.R.I.B.A.', according to the class of membership to which they belong.

## BOARD OF ARCHITECTURAL EDUCATION

### R.I.B.A. EXAMINATIONS

The Examination in Professional Practice and Practical Experience was held in London and Edinburgh on 15 and 16 November 1954. Of the 256 candidates examined, 231 passed and 25 were relegated. The successful candidates are as follows:—

Abadie: R. N. Gammans: H. C. Garwood-Jones: T. P. Gilbert: M. W. Gillings: R. J. Glover: J. E. S. Graham: G. G. Green: M. E. Gribble: R. A. Griffiths: K. F. Grillet: C. N. Grist: M. W. Groves: P. D. B. Hallam: R. W. Haskell: J. C. Hawke: Osric Haworth: W. P. Blair: K. V. Haynes: K. F. Hector: J. C. Hilton: D. J. Hindson: D. J. Hobbs: C. E. Hobby: D. J. Holland: R. D. Holloway: D. R. Holt: T. B. Hook: B. C. C. Hooper: D. H. Howell: G. W. Hughes: Peter Hunniball: D. T. Hutchins: N. D. Ithier: J. R. F. Ives: D. S. Jackson: A. D. Jacobs: L. I. James: F. G. Jennings: G. M. Jeppson: Eliza (Mrs.). Jeppson: M. J. Jeruzalski: Tadeusz Johnston: R. E. Jolly: J. E. Jones: Eric Jones: J. E. V. Jones: L. D. Jones: Stanley Keating: M. N. Kerly: F. R. Keys: P. C. Kinross: John Kitney: Deryk Lane: K. W. Langham: G. K. Latham: M. E. Latimer: J. R. Latter: G. E. Lazzeri: A. G. Leaning: J. D. Lee: A. H. Lenartowicz: J. Z. Looker: K. P. J. Lorenowicz: B. W.

Luetchford: D. M. McBride: J. C. Manning: C. F. Manning: E. W. Marks: P. G. Marsh: P. H. Mathias: J. W. (Miss) Millar: Walter Miskin: G. M. Monk: M. R. W. Morton: Denis Mulchinock: M. G. Murray: James Neyman: Lech Nixon: P. L. Nuttall: P. R. Owen: Richard Owen: R. E. Palmer: Rosemary (Miss) Parkman: G. P. Patton: N. B. Pearce: J. G. Pearce: R. C. Pennell: G. R. J. Phillips: P. H. F. Phillips: R. J. Pilkington: Louis Porter: R. P. R. Potter: R. J. Priestley: Bryan Pugh: D. E. Quinton: R. J. Rapoport: Sydney Reed: D. A. Reed: L. L. Reeves: A. W. J. Rhodes: G. L. H. Richardson: R. J. H. Riley: Frank Robinson: F. A. Roden: J. C. Roe: R. K. B. Rogers: Leonard Rose: R. T. Rosenbloom: Jack Ross: A. H. Ross: I. G. Rosser: E. H. Rothera: B. D. Ruchlewicki: M. S. Ruffle: David Rummery: D. A. H. Saillard: K. R. Sargent: K. P. Scaife: John Sellick: F. P. Selves: L. W. Silverwood: A. W. Simpson: B. J. Skeates: B. G. Skyner: R. S. Slingo: G. P. Sliwa: J. A. Smith: J. J. M. Stanley: Noel Stevens: D. A. Stirrat: W. C. Stout: Roy Sugden: B. H. Sutcliffe: S. R. Sutherland: J. D. Thompson: J. K. Throssell: E. R. Tonge: C. V. Tucker: J. R. Turner: Alan Turpin: J. W. Vale: R. H. Waite: Donald Walker: Ralph Walker: R. P. Wall: A. E. Wallbank: R. N. Walsh: R. B. Wanstall: J. H. Ward: B. P. Wareham: J. K. Warnes: P. F. Watts: M. J. Weaver: L. J. Weir: James Wells: Raymond Wells-West: K. H. West: J. S. White: J. J. White: Ronald Wigglesworth: J. M. Williams: J. A. Williams: J. H. Williams: J. S. Williams: R. G. Wilson: Donald Wilson: J. V. Wilson: K. H. Wintle: O. W. Woodford: N. L. Young: P. A. G.

## ALLIED SOCIETIES

### Changes of Officers and Addresses

*South Eastern Society of Architects, Brighton District Branch.* Chairman, Mr. H. S. Howgrave-Graham [A], Montem, Three Bridges Road, Crawley, Sussex.

*Devon and Cornwall Society of Architects, Truro Branch.* Chairman, Mr. S. W. Warn [A], County Hall, Truro. Hon. Secretary, Mr. Leslie Buxton [A], Tremont, Falmouth Road, Truro. Hon. Treasurer, Mr. K. E. Rundie [L], The Shieling, Higher Moresk, Truro.

*Royal Australian Institute of Architects: Queensland Chapter.* President, Mr. M. L. Conrad, Colonial Mutual Building, 289 Queen Street, Brisbane.

*East Africa Institute of Architects.* President, Mr. A. D. Connell [A], P.O. Box 123, Tanga, Tanganyika.

*Essex, Cambridge and Hertfordshire Society of Architects: Annual Dinner and Dance.* The President R.I.B.A., Mr. C. H. Aslin, C.B.E., and Mrs. Aslin were guests of honour at the

Annual Dinner and Dance of the Essex, Cambridge and Hertfordshire Society of Architects, at the Great Eastern Hotel, London, on 17 November. The President of the Society, Mr. H. Milesen [F] and Mrs. Milesen received the guests who included Chairmen of County Councils and Chairmen of Development Corporations within the Society's area. The toast of the R.I.B.A. and its Allied Societies was proposed by the President of the Society and replied to by the President R.I.B.A. The toast of 'Our Visitors' was proposed by Brigadier G. Shenstone, C.B.E., T.D., D.L., J.P. [F], and replied to by the Right Reverend the Lord Bishop of Barking. A turned and inlaid fruit bowl, a product of the recently formed Art & Craft Guild of the Hertfordshire Chapter was presented to Mrs. Aslin. The function, which was attended by nearly 200 members and their guests, was most successful and enjoyable.

*Nottingham, Derby and Lincoln Society of Architects. Annual Dinner.* The Nottingham, Derby and Lincoln Society of Architects held their annual dinner on Friday 5 November at the Welbeck Hotel, Nottingham. Among the guests were Mr. C. H. Aslin, C.B.E., President R.I.B.A., and Mr. C. D. Spragg, C.B.E., Secretary R.I.B.A.; The Lord Mayor of Nottingham and the Mayor of Derby; Brigadier Redmayne, D.S.O., M.P. for Rushcliffe, and Mr. J. L. Longland. There were no ladies present.

Proposing the toast of the cities of Nottingham, Derby and Lincoln, Mr. R. E. M. Coombes [F], Past President of the Society, said the association of the three cities in the Society dated from 1886. The Lord Mayor of Nottingham and the Mayor of Derby both replied to the toast. Mr. F. H. Crossley [F], President of the Nottingham, Derby and Lincoln Society of Architects, proposed the toast of the R.I.B.A. and Allied Societies. He said he thought the public knew too little about the work architects did, and architects ought to blow their trumpets more. Mr. Aslin (who is a former Borough Architect of Derby) replied to the toast. He made the point that if local authorities allowed architects to pick their contractors right at the beginning they would get good buildings at a lower price than they did at present.

Mr. S. F. Barrell [A], Chairman of the Lincoln Branch of the Society, proposed the toast of the guests, and Brigadier Redmayne and Mr. Longland responded.

*Devon and Cornwall Society of Architects. Annual Dinner.* This year's annual dinner and dance of the Devon and Cornwall Society of Architects was held on Wednesday 27 October at the Hotel Bristol, Newquay, and was attended by some seventy members and guests. Mr. J. Vyvyan Salisbury [F], President of the Society, was in the Chair. Among the guests were Mr. E. D. Jefferiss Mathews, O.B.E., A.R.I.C.S., Vice-President R.I.B.A., with Mrs. Mathews; Mrs. V. E. Gregory, J.P., Chairman of the Newquay Urban District Council; Sir John Molesworth St. Aubyn, Bart.; and Mr. W. M. Finnie, F.R.I.C.S., Chairman of the Devon and Cornwall branch of the Royal Institution of Chartered Surveyors.

Sir John Molesworth St. Aubyn proposed the toast of the R.I.B.A. Mr. Jefferiss Mathews, responding, expressed the view that it was a tragedy that with the release of private house building from restrictions, so many houses were being put up without the services of an architect. The Institute, he said, had decided to evolve a scheme whereby people would be able to build their houses from 'weekly magazine designs' and the houses would still be architect-designed.

Mr. W. M. Finnie proposed the toast of the Devon and Cornwall Society of Architects, and Mr. Vyvyan Salisbury, replying, spoke of the new techniques and materials among which architects, he said, had to grope today. He made an appeal to builders to cooperate more with architects by not 'putting in fancy prices'.

Mr. S. W. Warn [A], Chairman of the Truro Branch, proposed the health of the guests, and Mrs. V. E. Gregory responded.

## GENERAL NOTES

**Farm Buildings Conference, January 1955.** The Agricultural Land Service in conjunction with the Herts C.A.E.C. are to hold a Farm Buildings Conference at Hermitage Hall, Hitchin, on Wednesday 19 January. Members of the R.I.B.A. who are interested are invited to attend.

The conference will be opened at 11 a.m. by

Major M. E. Barclay, C.B.E., J.P., Chairman, Hertfordshire A.E.C. Before lunch there will be lectures on *The Use of Cement on the Farm*, by Mr. S. G. Boakes of the Cement and Concrete Association, and on *The Design and Economic Planning of Farm Buildings*, by Mr. W. G. Benoy [A]. After lunch Mr. G. W. Mack, B.A., of the Building Research Station is to lecture on *The Painting of Farm Buildings*. A Brains Trust will follow for which the lecturers are to be joined by Mr. J. Findlay of Woodoaks Farm, Rickmansworth, and Mr. H. Hollinrake, M.R.S.A.I., Farm Buildings Advisory Officer.

The Chairman will be Mr. Frank H. Garner, M.A., General Manager, Frederick Hiam, Ltd., Farmers, Cambridge.

**Correction.** We regret that a speech at the Conference on the Design of Health Buildings, reported on page 21 of the November JOURNAL, was wrongly attributed to Mr. Raymond W. Walker [L]. It was by Mr. Raymond Walker [L] who is staff architect to Milners Safe Company Ltd.

## Notes from the Minutes of the Council

### MEETING HELD 2 November 1954

**1. Appointments.** (A) *R.I.B.A. Representative on Council for Visual Education*. Alan Reed [A] in place of the late E. A. L. Martyn [F]. (Note: The other representative is Oswald P. Milne [F]). (B) *B.S.I. Committees PVC/2, Paints, and PVC/2/3, Colour Schedule Cards*. D. L. Medd [A].

**2. Ministry of Housing and Local Government Housing Medals, 1955.** At the request of the Minister the following were appointed by the Council as Chairmen of Regional Awards Committees:

<i>Regional Committee</i>	<i>Chairman</i>
1—Northern	C. W. C. Needham [F]
2—E. & W. Ridings	Noel Pyman [F]
3—North Midland	F. Hamer Crossley [F]
4—Eastern	E. C. R. Sandon [A]
5—London	Sir Charles Mole [F]
6—Southern	J. B. Brandt [F]
7—South Western	Robert Potter [F]
8—Wales	C. F. Bates [F]
9—Midland	S. T. Walker [F]
10—North Western	G. Grenfell Baines [A]
12—South Eastern	R. W. Paine [A]

In addition, the following were appointed as architect members of the Awards Committee for Region No. 5—London: C. E. Culpin [F], G. A. Jellicoe [F], Anthony Minoprio [F], T. E. North [F].

**3. Direct Election to the Fellowship.** On the recommendation of the Councils of the Royal Australian Institute of Architects and the Institute of South African Architects respectively, the following were elected to the Fellowship under the provisions of the Supplemental Charter of 1925, Section IV, Clause 4: William Thomas Leighton [A], Past President, Western Australian Chapter, R.A.I.A.; Henk Theodorus Otto Niegeeman (South Africa).

**4. R. Phene Spiers [F].** The Secretary reported that Mr. Bernard Hickman, of Colwyn Bay, had presented a plaque struck in commemoration of R. Phene Spiers, F.S.A. [F], for keeping in the archives of the Royal Institute. A letter

of appreciation and thanks was sent to Mr. Hickman.

**5. National Buildings Record.** The Secretary reported that after considering representations made by a number of bodies including the R.I.B.A., the Minister of Works had decided not to proceed with the proposal for the Ministry of Works to take over the National Buildings Record. The Council received the decision to leave the National Buildings Record as an independent body with satisfaction.

**6. Membership.** The following members were elected: as Fellows 3; as Associates 5.

**7. Students.** 30 Probationers were elected as Students.

**8. Applications for Election.** Applications for election were approved as follows: *Election 7 December 1954*; as Honorary Fellow 1, as Fellows 35, as Associates 135, *Election 1 March 1955 (Overseas Candidates)*: as Fellow 1, as Associates 7, as Licentiates 2.

**9. Application for Reinstatement.** The application of Mr. George Bowen Fritchley (Retd. F) for reinstatement as a Fellow was approved.

**10. Applications for Transfer to Retired Members' Class under Bye-law 15.** The following applications were approved: As Retired Fellows: Archibald Scott, George Edward Tonge.

**11. Obituary.** The Secretary reported with regret the death of the following members: Alexander Einhorn (H.C.M.), Alexander Molokin (H.C.M.), Alexander S. Nikolsky (H.C.M.), Alexei Shiossiev (H.C.M.), Victor Vesnin (H.C.M.) (Mr. Vesnin was Royal Gold Medallist 1945), John Brittain Adams [F], Percy Hubert Keys, D.S.O., M.C. [F], Albert Reginald Shibley [F], Colonel Alfred Spain, V.D. [F], Cecil Henry Perkins [A], Charles Alexander Perry [A], Willie Hemingway [Retd. A], Charles Turnbill Ewing [L], William Riddle [L], Jeffrey Aldam Tonge [Retd. L]. By resolution of the Council the sympathy and condolences of the Royal Institute have been conveyed to their relatives.

## Membership Lists

### ELECTION: 7 DECEMBER 1954

The following candidates for membership were elected on 7 December 1954.

### AS HON. FELLOW (1)

**Massey:** The Right Hon. Vincent, C.H., Governor-General of Canada, Ottawa, Canada

### AS FELLOWS (34)

**Arnold:** Raymond Charles [A 1919].  
**Banks:** Arthur Vivian, Dip.Arch. (Cardiff) [A 1927].

**Campbell:** Noel Evans [A 1946], Coleraine N. Ireland.

**Cave:** Reginald William, Dipl.Arch. (U.C.L.) [A 1937], Oxford.

**Davy:** Geoffrey, Dipl.Arch. (Leeds) [A 1936].

**Duke:** George Clifford, A.A.Dipl. [A 1934].

**Edwards:** Kenneth Drew [A 1920], Leicester.

**Elsom:** Cecil Harry [A 1939].

**Gray:** Percy [A 1946].

**Gregory:** Lionel Eric, Dipl.Arch. (L'pool) [A 1940], Poole.

**Habershon:** Alfred Eustace [A 1890], Worthing.

**Hunt:** Vincent Collingwood [A 1927].

**Lipski:** Louis L., A.A.Dipl. [A 1948].

**Nealon:** Kenneth, A.R.I.C.S. [A 1936], Bristol.

**Pooley:** Frederick Bernard, F.R.I.C.S. A.M.T.P.I. [A 1940], Aylesbury.

**Powell:** Harold Hamilton, B.Arch. (L'pool) [A 1930].

**Powell:** Maynard Henry, F.R.I.C.S. [A 1931].

Minchinhampton.

**Rhodes:** Greville Stuart, A.A. Dipl. [A 1939].

**Templeman:** Kenneth Frederick, A.M.T.P.I. [A 1935].

**Ware:** John Lancaster, Dipl.Arch. (U.C.L.) [A 1947].

**Yarwood:** George [A 1946], Barnsley.

the following Licentiates who have passed the qualifying Examination:—

**Clavering:** John Cecil.

**Harmer:** Frederick George, Harrogate.

**Thurley:** Cyril Frederick James, Paignton.

**Travis:** Kenneth, Newport Pagnell.

**Vickery:** Kenneth Percy, Trowbridge.

and the following Licentiates who are qualified under Section IV, Clause 4(c) (ii) of the Supplemental Charter of 1925:—

**Doniger:** William James, F.R.I.C.S., Winchester.

**Gomme:** Lewis James Fremen, Cambridge.

**Lovell:** Jack Pritchard.

**Matthews:** Harold Haynes.

**Norris:** William George.

**Slater:** Reginald John Langham, J.P.

**Smail:** Herbert Morgan, O.B.E., T.D., D.L., Dundee.

**Webb:** George Frederick, Dudley.

AS ASSOCIATES (135)

**Abercrombie:** John Deryck, M.C.D., B.Arch. (L'pool), Wendover.

**Alexander:** Anthony John Frederick.

**Armstrong:** James Brown, D.A.(Edin.), Dunfermline.

**Arnold:** Christopher Wilberforce, B.A.(Arch.) (Lond.), M.A.(Arch.) (Stanford, U.S.A.).

**Askew:** Eric Royce John, Dipl.Arch. (Northern Polytechnic), Reading.

**Aylett:** David, Dipl.Arch. (Northern Polytechnic), Aylesbury.

**Balcombe:** George Henry, Brighton.

**Balmbra:** Arthur Alan Kenneth, Dip.Arch. (Dunelm), Morpeth.

**Bathgate:** Douglas Ian.

Beckles **Willson: Anthony**, M.C.D., B.Arch. (L'pool), Liverpool.  
 Bell: **Kenneth Leslie**, B.Arch. (Dunelm), West Hartlepool.  
 Bevington: **Alistair Macfarlane**.  
 Bott: **Oliver John Phillips**, B.A.(Cantab.), Stoke-on-Trent.  
 Brookbanks: **Donald George**, B.A.(Arch.) (Lond.).  
 Brookes: **Joseph John**, Bristol.  
 Brown: **Alexander**, D.A.(Edin.), Edinburgh.  
 Bull: **Bernard Joseph**, Dip.Arch. (Manchester).  
 Campbell Jones: **Patrick Napier**, B.A.(Arch.) (Lond.).  
 Carr: **Terence Patrick**, B.A.(Arch.) (Lond.), Woking.  
 Carson: **Geoffrey Leon**.  
 Chow: **Siong Peng**, B.Arch. (Dunelm), Hertford.  
 Clark: **Robert Brian**, Hull.  
 Clarke: **John Vandepoor**, Bedford.  
 Clarke: **Robin Pickering Attwell**.  
 Clubley: **John David**, Nottingham.  
 Clugston: **James Martin**, D.A.(Glas.), Glasgow.  
 Collins: **Gordon Crawford**.  
 Cooper: **Geoffrey Lawrence**, Dipl.Arch. (U.C.L.).  
 Cope: **Gerald Martin**, Dipl.Arch. (Northern Polytechnic).  
 Cox: (Miss) **Patricia Margaret**, Cobham.  
 Crawford: **Michael Yorke**, B.A.(Arch.) (Lond.), Ash.  
 Cuddon: **Ronald Edmond**, Dip.Arch. (The Polytechnic), Bromley, Kent.  
 Davall: **John William Ernest**.  
 Davison: **Eric Dalgleish**, D.A.(Edin.), Musselburgh.  
 Davies: **Robert Hayden**.  
 Dixon: **Robert Brian**, Dip.Arch. (Nottm.), Nottingham.  
 Doran: **Michael John**.  
 Drennan: **Murray Stewart**, D.A.(Edin.), Belfast.  
 Egbor: **Augustine Akhuemokhan**, B.Arch. (Dunelm), Newcastle upon Tyne.  
 Ellis: **George Frederick**, D.A.(Edin.), Belfast.  
 English: **Denis Ormonde**, Belfast.  
 Fellows: **Roy Henry**, Dip.Arch. (Birm.), Bilston.  
 Floyd: **Peter Leal**, B.A.(Arch.) (Lond.), M.Arch.(Mass. Inst. Tech.).  
 Ford: **Alan Scott**, M.A.(Cantab.), Dipl.Arch. (U.C.L.), Rotherfield.  
 Forster: (Miss) **Margaret Mary**, B.Arch. (Dunelm), Annan.  
 Franco: **Alfie**.  
 Frost: **Kenneth**, A.R.I.C.S., Bradford.  
 Fyfe: **Gordan Logan**, D.A.(Edin.), Edinburgh.  
 Gascoigne: **Ralph Adrian**, Dipl.Arch. (U.C.L.).  
 Gibson: **John Albert**, Ryton-on-Tyne.  
 Goldman: **Gerald Coleman**, B.Arch. (Rand Dip.T.P.(Lond.), A.M.T.P.I.).  
 Gourlay: **Thomas Barron**, D.A.(Edin.).  
 Grant: **Montague Robert**, B.Arch. (Melbourne).  
 Graves: **Michael Vincent**, Dip.Arch. (The Polytechnic), Tunbridge Wells.  
 Grima: **George Peter**, Dipl.Arch. (Northern Polytechnic).  
 Grundy: **John Brian Hilbre**, Dip.Arch (Leics.)  
 Skegness.  
 Hanney: (Miss) **Margaret Jean**, B.A.(Arch.) (Manchester), Coventry.  
 Harper: **Alan Sloan**, Stockton-on-Tees.  
 Hennessy: **John Kerry Michael**, B.A.(Arch.) (Lond.).  
 Hennessy: **Nicholas Max Godfrey**, Dipl.Arch. (U.C.L.).  
 Heptonstall: **Donald**, Morecambe and Heysham.  
 Hillman: **Mayer**, B.A.(Arch.) (Lond.).  
 Hincliffe: **Terence**, Dip.Arch. (Leics.), Barnsley.  
 Howard: **Peter**, Dipl.Arch. (U.C.L.).  
 Ind: **Charles Peter Messiter**, Dipl.Arch. (U.C.L.), Sittingbourne.

Jebb: **Philip Vincent Belloc**, B.A.(Cantab.), Horsham.  
 Jobling: **John Trevor**, Dip.Arch. (Leics.), Leicester.  
 Kirk: **Ian Clark**.  
 Lacey: **Gerald Ian**, B.Arch. (L'pool), Stoke Poges.  
 Lakofski: (Miss) **Denise Valda**.  
 Lannigan: **Samuel Hamilton**.  
 Lee: **Rigby Armitage**, A.A.Dipl.  
 Lehrman: **Jonas Benzon**.  
 Lloyd: **John Raymond**, Lyme Regis.  
 Lynch: (Miss) **Angela Constance**.  
 McCall: **Archibald Robert**, Dumfries.  
 Macdonald: **Angus**, Dip.Arch. (Abdn.), Inverness.  
 MacLean: **Duncan**, Dip.Arch. (Abdn.), Edinburgh.  
 MacMinn: **John A.**, F.S.A.(Scot.) (L), Edinburgh.  
 Major: **Roger Victor John Gleghornie**.  
 Marsh: **Gilbert Annesley**.  
 Mauduit: **Anthony William**, Canterbury.  
 Morgan: **Brian Ronald**.  
 Morse: **Colin**, Dip.Arch. (Leics.), Chesterfield.  
 Murta: **Kenneth Hall**, Dip.Arch. (Dunelm), Sunderland.  
 Newton: **Peter Francis**.  
 Nicol: **David Mark Wotherspoon**, Dip.Arch. (Abdn.), Hertford.  
 Noël: **John**, Dip.Arch. (Leics.), Swansea.  
 Oberlander: **John Reid**, D.A.(Edin.), Edinburgh.  
 Ogródzki: **Tadeusz Marian**, Dip.Arch. (Leics.), Leicester.  
 Paul: **James**, Dip.Arch. (Abdn.), Gardenstown.  
 Peretti: **Peter Anthony**, A.A.Dipl.  
 Perkins: **Peter Noel**.  
 Pine: **John Michael**, Dip.Arch. (Birm.).  
 Podd: **Martin Sefton**.  
 Rankin: **Edward Norman**, Dublin.  
 Rickard: **Bruce Arthur Lancelot**, A.S.T.C. (Arch.).  
 Ripley: **George William**.  
 Roberts: **John Arthur**, Dip.Arch. (Leics.), Lincoln.  
 Robertson: **Alexander Hughes**, Dip.Arch. (Dunelm), Hebburn-on-Tyne.  
 Robertson: **John Calderwood**, D.A.(Glas.), Kilmarnock.  
 Routley: **John Stanley**, Dipl.Arch. (U.C.L.), Purley.  
 Sahgal: **Krishan Lal**.  
 Salter: **William Youngson**, Dip.Arch.(Abdn.), Aberdeen.  
 Scott-Williams: **Gerard**.  
 Seal: **Donald Alfred**, Dipl.Arch. (Northern Polytechnic), Horley.  
 Seddon: **Ernest Geoffrey**, Dip.Arch. (Manchester), Manchester.  
 Shelley: **John Brian**, Dip.Arch. (Birm.), Basingstoke.  
 Shewan: **Denis Michael Alastair**, Dip.Arch. (Abdn.), Aberdeen.  
 Singleton: **Peter**.  
 Slade: **Harry Gordon**, Dipl.Arch. (U.C.L.), Glastonbury.  
 Snow: **Thomas Anthony**, Bedford.  
 Sowerbutts: **Ernest William**, B.A.(Arch.) (Sheffield), Hale.  
 Stanley: **Robert Fredrick**, Belfast.  
 Steel: **Donald William**, Hartfield.  
 Stephens: **Peter**.  
 Stimson: **St. John Perrot**, Dip.Arch. (Leics.), Leicester.  
 Stokes: **Raymond Dennis**, East Sheen.  
 Stone: **Rodney Michael**, Dip.Arch. (The Polytechnic).  
 Swanston: **Iain Wattie**, Dipl.Arch. (U.C.L.), West Wickham.  
 Thomas: **Geoffrey James**, Guildford.  
 Thomson: **Ian Manson**, Dip.Arch. (Abdn.), Aberdeen.  
 Turner: **David Donald**, Ware.  
 Valkenburg: **Bastiaan**.

Vercelli: **Peter John Biagio**, B.A.(Arch.) (Lond.).  
 Watkinson: **Peter Albert**, Reigate.  
 Watson: **James**, D.A.(Dundee), Fife.  
 West: **Bernard Billing**.  
 Whittaker: **Peter David**, B.A.(Arch.) (Lond.).  
 Wiles: **Ronald George**, Tonbridge.  
 Wood: **Peter Russell**.  
 Yellowlees: **Benjamine Valentine Ingram**, Edinburgh.  
 Young: **James Child Allendale**, South Shields.

#### ELECTION: 4 JANUARY 1955

An election of candidates for membership will take place on 4 January 1955. The names and addresses of the candidates, with the names of their proposers, are herewith published for the information of members. Notice of any objection or any other communication respecting them must be sent to the Secretary, R.I.B.A., not later than Wednesday 29 December 1954.

The names following the applicant's address are those of his proposers.

#### AS HON. FELLOW (1)

Eccles: The Right Hon. Sir David McAdam, K.C.V.O., M.P., 6 Barton Street, S.W.1. Proposed by the Council.

#### AS HON. ASSOCIATES (3)

Colvin: **Howard Montagu**, 28 Museum Road, Oxford. Proposed by the Council.

Morris: **Henry**, C.B.E., M.A.(Oxon.), M.A.(Cantab.), 15 Fitzwilliam Street, Cambridge. Proposed by the Council.

Pilot: **Robert W.**, M.B.E., D.C.L.(Bishops University), President, Royal Canadian Academy of Arts, Corresponding Member, National Academy of Design, New York, U.S.A., 1519 Pine Avenue, W., Montreal, P.Q., Canada. Proposed by the Council.

#### AS FELLOWS (6)

Clarke: **Lewis Arthur** [A 1935], 6 The Quadrant, Coventry; 17 Ranulf Croft, Cheylesmore, Coventry. Herbert Jackson, G. A. G. Miller, J. F. R. Gooding.

Cole: **Douglas James**, Dip.Arch. (The Polytechnic) [A 1944], 24 Buckingham Street, W.C.2; 1 Paxton Terrace, S.W.1. W. W. Fisk, J. S. Walkden, David Jenkin.

Gear: **Arthur Middleton** [A 1939], 12 Manchester Square, W.1; 16 Addison Crescent, Kensington, W.14. C. H. Aslin, Frederick MacManus, M. H. Thomas.

Gould: **Geoffrey Hamilton**, A.A.Dipl. [A 1941], 1 Bloomsbury Square, W.C.1; Thorndon Friars, Monken Hadley, Herts. M. L. Winslade, Miss J. G. Ledebroer, W. C. Symes.

Hall: **Victor** [A 1942], Stone House, Corby, Northants; Old King's Head, Great Easton, Leicestershire. Stanley Ripley, Dr. D. R. Harper, Prof. J. S. Allen.

Hannam: **Francis Lambson** [A 1936], 17 Orchard Street, Bristol, I. T. H. B. Burrough, G. D. G. Hake, E. H. Button.

#### AS ASSOCIATES (63)

The name of a school, or schools after a candidate's name indicates the passing of a recognised course.

Barclay: (Miss) **Anne Stuart**, D.A.(Glas.) (Glasgow Sch. of Arch.), 45 Fotheringay Road, Glasgow, S.1. Prof. W. J. Smith, F. R. Burnet, J. Bell.

Barden: **John Edward**, Dipl.Arch. (Northern Polytechnic) (Northern Poly. (London)): Dept.

of Arch.), 4 Casslee Road, Catford, S.E.6. T. E. Scott, S. F. Burley, C. G. Bath.

**Blower:** Michael, A.A.Dipl. (Arch.Assoc. (London): Sch. of Arch.), The Square, Liphook, Hants. Guy Morgan, A. C. Townsend, The Hon. Lionel Brett.

**Bridge:** Ronald, Dipl.Arch. (Leeds) (Leeds Sch. of Arch.), 119 Ravenscliffe Avenue, Eccleshill, Bradford, Yorks. F. Chippindale, D. A. Fowler, W. C. Brown.

**Brown:** Robert Scott, B.Arch. (Rand) (Passed a qualifying Exam. approved by the I.S.A.A.), 40 Orsett Terrace, W.2. Applying for nomination by the Council under Bye-law 3(d).

**Buckingham:** Albert Barrie, Dipl.Arch. (Northern Polytechnic) (Northern Poly. (London): Dept. of Arch.), 7 Hook Walk, Edgware, Middlesex. T. E. Scott, S. F. Burley, Harold Bramhill.

**Burnett:** Robert Stirling, D.A.(Glas.) (Glasgow Sch. of Arch.), 223 Kirkintilloch Road, Bishopbriggs, Nr. Glasgow. Prof. W. J. Smith, Alexander Wright, T. J. Beveridge.

**Cameron:** Roger John (Arch. Assoc. (London): Sch. of Arch.), 19 Lowfield Road, Haywards Heath, Sussex. Sir Hugh Casson, W. B. Stedman, Arthur Korn.

**Castel:** James, D.A.(Glas.) (Glasgow Sch. of Arch.), 3 Deepdene Road, Westerton, Bearsden, Dunbartonshire. F. R. Burnet, J. Bell, Prof. W. J. Smith.

**Cattanach:** Donald Hood, D.A.(Glas.) (Glasgow Sch. of Arch.), The Laurels, Kingussie, Inverness-shire. Prof. W. J. Smith, A. G. Henderson, William McCrea.

**Clow:** Alexander Ralston, D.A.(Glas.) (Glasgow Sch. of Arch.), 59 Airlie Street, Hyndland, Glasgow, W.2. Prof. W. J. Smith, G. F. Shanks, Walter Underwood.

**Cole:** David Charles (Arch. Assoc. (London): Sch. of Arch.), West End House, Ridgewell, Halstead, Essex. Arthur Korn, Roff Marsh, H. G. Goddard.

**Dance:** Dennis Arthur (Arch. Assoc. (London): Sch. of Arch.), 5 Phillimore Terrace, Kensington, W.8. L. H. Parsons, E. B. O'Rorke, C. J. Kay.

**Dean:** Peter Nicholas (Special Final), Warwick House, High Street, Sidmouth. Applying for nomination by the Council under Bye-law 3(d).

**Debenham:** (Miss) Anne, B.A.(Arch.) (London) (Bartlett Sch. of Arch.: Univ. of London), 24 Condor Court, Portsmouth Road, Guildford, Surrey. Prof. H. O. Corfiato, W. A. Eden, R. C. White-Cooper.

**Dobson:** Harry Ernest Miller, Dip.Arch. (Dunelm) (King's Coll. (Univ. of Durham) Newcastle upon Tyne Sch. of Arch.), 20 Cornelia Terrace, Seaham, Co. Durham. Prof. W. B. Edwards, Dale Cuthbertson, J. H. Napper.

**Drew:** Eric George, Dipl.Arch. (U.C.L.) (Bartlett Sch. of Arch.: Univ. of London), The Close, Quality Street, Merton, Surrey. Victor Heal, L. S. Sullivan, R. V. Smith.

**Duff:** (Miss) Anne, D.A.(Glas.) (Glasgow Sch. of Arch.), 69 St. Ronan's Drive, Burnside, Rutherglen, Glasgow. Prof. W. J. Smith, William McCrea, F. R. Burnet.

**Duncan:** Robert Davidson, D.A.(Glas.) (Glasgow Sch. of Arch.), 27 Ledihamerch Road, Bearsden, by Glasgow. Prof. W. J. Smith, T. J. Beveridge, W. J. B. Wright.

**Duncan:** Stuart, Dip.Arch. (Abdn.) (Aberdeen Sch. of Arch.: Robert Gordon's Tech. Coll.), 'Wellville', St. Catherine Street, Banff. E. F. Davies, A. G. R. Mackenzie, J. G. Marr.

**Durham:** (Miss) Jane, Dipl.Arch. (U.C.L.) (Bartlett Sch. of Arch.: Univ. of London),

Dunelm, Grayshott, Hindhead, Surrey. Prof. H. O. Corfiato, R. C. White-Cooper, S. Hyde.

**Evans:** John Robert, Dip.Arch. (Cardiff) (Welsh Sch. of Arch.: The Tech. Coll., Cardiff), 'Welwyn', Bethel Road, Caernarvon, North Wales. Lewis John, C. F. Jones, John Hughes.

**Firth:** (Miss) Clara Charleson, D.A.(Glas.) (Glasgow Sch. of Arch.), c/o Campbell, 6 Clifton Place, Glasgow. Prof. W. J. Smith, W. A. P. Jack, G. W. Robertson.

**Hartley:** Edward Henrik (Final), 12 Harrington Court, Glendower Place, S.W.7. Applying for nomination by the Council under Bye-law 3(d).

**Hill:** James Hamilton, D.A.(Glas.) (Glasgow Sch. of Arch.), Garshangan, by Kilmacolm, Renfrewshire. F. R. Burnet, J. Bell, Prof. W. J. Smith.

**Hunter:** James McEwan, D.A.(Glas.) (Glasgow Sch. of Arch.), 167 Prestwick Road, Ayr, Ayrshire. J. A. Carrick, William McCrea, Prof. W. J. Smith.

**Jones:** Thomas Glyn, Dip.Arch. (Cardiff) (Welsh Sch. of Arch.: The Tech. Coll., Cardiff), 5 Park Road, Penrhyneddraeth, Merionethshire. Lewis John, C. F. Jones, John Hughes.

**Lambert:** Christopher Nigel (Arch. Assoc. (London): Sch. of Arch.), 12 Kingsend, Ruislip, Middlesex. F. C. Button, D. L. Lasdun, E. M. Fry.

**Lloyd:** Francis Henry (Special Final), 134 Cottenham Road, Luton, Beds. A. B. Waters, A. L. Smith, W. F. Howard.

**Lowe:** Jeremy Burman, Dipl.Arch. (Northern Polytechnic) (Northern Poly. (London): Dept. of Arch.), Baron's Place, Mereworth, Maidstone, Kent. Prof. Basil Ward, H. D. Roberts, T. E. Scott.

**Macdonald:** Ian Watson Aitken, D.A.(Glas.) (Glasgow Sch. of Arch.), 120 Novar Drive, Glasgow, W.2. F. R. Wylie, G. F. Shanks, Walter Underwood.

**McGowan:** Robert Nivison, D.A.(Glas.) (Glasgow Sch. of Arch.), c/o Hotchkiss, 19 Clifford Street, Glasgow, S.W.1. Prof. W. J. Smith, W. A. P. Jack, G. W. Robertson.

**MacIntyre:** Jack Baker, D.A.(Glas.) (Glasgow Sch. of Arch.), 20 Woodlands Crescent, Bothwell, Lanarkshire. Prof. W. J. Smith, A. G. Henderson, William McCrea.

**O'Hare:** John Augustine, B.Arch. (N.U.I. Dublin) (Univ. Coll., Dublin, Ireland: Sch. of Arch.), 'Bayshore', Seafield Road, Killiney, Co. Dublin, Eire. J. V. Downes, J. J. Robinson, D. P. Hanley.

**Oldham:** Kenneth, M.C.D., B.Arch. (L'pool) (Liverpool Sch. of Arch.: Univ. of Liverpool), 939 Manchester Road, Linthwaite, Huddersfield, Yorks. Norman Culley, Prof. R. Gardner-Medwin, N. S. Lunn.

**Patki:** Yeshwant Janardan (Final), 34 Glenloch Road, N.W.3. Applying for nomination by the Council under Bye-law 3(d).

**Pattullo:** Leonard Ronald Wybrants, D.A. (Dundee) (Dundee Coll. of Art: Sch. of Arch.), 'Thik Hai', Carlogie Road, Carnoustie, Angus. John Needham, T. H. Thoms, G. C. Young.

**Paull:** Clifford Haigh, Dip.Arch. (Dunelm) (King's Coll. (Univ. of Durham) Newcastle upon Tyne, Sch. of Arch.), 6 Ashmore Street, Stockton Road, Sunderland, Co. Durham. Prof. W. B. Edwards, S. W. Milburn, J. H. Napper.

**Poole:** Stanley, D.F.M., D.A.(Edin.) (Edinburgh Coll. of Art: Sch. of Arch.), 26 Craigmount View, Edinburgh, 12. T. W. Marwick, J. R. McKay, L. G. MacDougall.

**Rawling:** George Ian, B.Arch. (Dunelm) (King's Coll. (Univ. of Durham) Newcastle upon Tyne, Sch. of Arch.), 18 The Crescent, Wallsend on Tyne, Northumberland. Prof. W. B. Edwards. Prof. J. S. Allen, J. H. Napper.

**Roberts:** Francis Bernard, Dipl.Arch. (Northern Polytechnic) (Northern Poly. (London): Dept. of Arch.), Traquair, Cross Roads, Holywell Flintshire. T. E. Scott, S. F. Burley, C. G. Bath.

**Robertson:** John Dixon, D.A.(Edin.) (Edinburgh Coll. of Art: Sch. of Arch.), 13 Boghill Road, Kirkcaldy, Fife. G. B. Deas, James Shearer, T. W. Marwick.

**Rosner:** Robert Hans, B.Arch. (Dunelm) (King's Coll. (Univ. of Durham) Newcastle upon Tyne, Sch. of Arch.), 81 Duesbury Street, Hull, E. Yorks. Prof. W. B. Edwards, George Williams, J. Konrad.

**Rylatt:** Jack (Special Final), 12 Devon Place Green Dykes Lane, York. D. A. Fowler, C. Leckenby, E. Firth.

**Ryley:** Michael, Dipl.Arch. (Leeds) (Leeds Sch. of Arch.), 'Moorelea', 22 Hill Crescent, Burley-in-Wharfedale, Yorks. F. Chippindale, D. A. Fowler, N. H. Fowler.

**Scher:** Harold Peter, B.A.(Arch.) (London) (Bartlett Sch. of Arch.: Univ. of London), 281 Southcroft Road, Streatham, S.W.16. Prof. H. O. Corfiato, R. C. White-Cooper, S. Hyde.

**Scott:** Walter Smith, Dip.Arch. (Abdn.) (Aberdeen Sch. of Arch.: Robert Gordon's Tech. Coll.), 37 Stanley Street, Aberdeen. E. F. Davies, T. S. Sutherland, J. G. Marr.

**Screase:** Philip Sidney (Final), 37 Fallowfield Road, Solihull, Birmingham. Stuart Bentley, G. A. Crockett, R. G. Morgan.

**Selvaratnam:** Visvanathan (Arch. Assoc. (London): Sch. of Arch.), 107 Philbeach Gardens, S.W.5. R. F. Jordan, H. G. Goddard, Arthur Korn.

**Shepherd:** Scott Anthony (Arch. Assoc. (London): Sch. of Arch.), 5 Westgate Road, Beckenham, Kent. Arthur Korn, R. F. Jordan, H. G. Goddard.

**Stewart:** Alexander Reid, D.A.(Glas.) (Glasgow Sch. of Arch.), 22 Church Street, Blantyre, Lanarkshire. Alexander Wright, J. A. Coia, Prof. W. J. Smith.

**Taylor:** Michael John, Dipl.Arch. (Leeds) (Leeds Sch. of Arch.), 73 Green Lane, Newby, Scarborough. W. A. Eden, F. Chippindale, D. A. Fowler.

**Teasdale:** Brian Walton, B.Arch. (Dunelm) (King's Coll. (Univ. of Durham) Newcastle upon Tyne, Sch. of Arch.), 105 Cardigan Terrace, Heaton, Newcastle upon Tyne, 6. Prof. W. B. Edwards, D. L. Couves, J. H. Napper.

**Telfer:** Walter, Dip.Arch. (Dunelm) (King's Coll. (Univ. of Durham) Newcastle upon Tyne, Sch. of Arch.), 51 Church Avenue, Gosforth, Newcastle upon Tyne. Prof. W. B. Edwards, Prof. J. S. Allen, J. H. Napper.

**Tyler:** Keith Reginald, Dipl.Arch. (U.C.L.) (Bartlett Sch. of Arch.: Univ. of London), 23 Bradmore Way, Coulsdon, Surrey. Prof. H. O. Corfiato, Thomas Ritchie, L. C. Holbrook.

**Wallace:** (Miss) Jean Stuart Campbell, D.A.(Glas.) (Glasgow Sch. of Arch.), 8 Glasgow Street, Hillhead, Glasgow, W.2. Prof. W. J. Smith, William McCrea, James Taylor.

**Wallace:** Stuart Moore, D.A.(Glas.) (Glasgow Sch. of Arch.), 186 Eastwoodmains Road, Clarkston, Glasgow. Prof. W. J. Smith, N. R. Johnston, T. J. Beveridge.

**Warner:** David Henry, Dipl.Arch. (Northern Polytechnic) (Northern Poly. (London): Dept. of Arch.), 11 Loring Road, Whetstone, N.20. T. E. Scott, S. F. Burley, Harold Bramhill.

**Welsh:** (Miss) Jean Gordon, D.A.(Glas.), 40

Highburgh Road, Dowanhill, Glasgow, W.2. Prof. W. J. Smith, A. G. Henderson, William McCrea.

West: **Gerald Thomas, B.A.(Arch.) (Lond.)** (Bartlett Sch. of Arch.: Univ. of London), 23 Warham Road, S. Croydon, Surrey. Prof. H. O. Corfato, R. C. White-Cooper, A. E. Lees.

White: **David Martin Brunel, Dip.Arch. (Duncim)** (King's Coll. (Univ. of Durham) Newcastle upon Tyne, Sch. of Arch.), Russets, Peters Lane, Whiteleaf, Nr. Princes Risborough, Bucks. Prof. W. B. Edwards, J. H. Napper and applying for nomination by the Council under Bye-law 3(d).

Wood: **Henry Howard Gardner, D.A.(Glas.)** (Glasgow Sch. of Arch.), 356 Broomfield Road, Glasgow, N.1. Prof. W. J. Smith, T. S. Cordiner, A. G. Henderson.

Wray: **(Miss) Joyce Bryce, B.A.(Manchester)**, Dip.Arch. (The Polytechnic) (The Poly., Regent Street, London: Sch. of Arch.), 24 Buckland Crescent, N.W.3. David Jenkin, J. S. Walkden, Dr. J. L. Martin.

#### ELECTION: 5 APRIL 1955

An election of candidates for membership will take place on 5 April 1955. The names and addresses of the overseas candidates, with the names of their proposers, are herewith published for the information of members. Notice of any objection or any other communication respecting them must be sent to the Secretary, R.I.B.A., not later than Saturday 12 March 1955.

The names following the applicant's address are those of his proposers.

#### AS ASSOCIATES (13)

**Beech: William Jack** (Passed a qualifying Exam. approved by the N.Z.I.A.), 317 Victoria Arcade, Shortland Street, Auckland, C.1, New Zealand. M. K. Draffin, H. L. Massey, Prof. C. R. Knight.

**Butcher: Thomas Richard, Dip.Arch. (C.T.)** (Passed a qualifying Exam. approved by the I.S.A.A.), c/o Town Engineers Department, Town Hall, Vereeniging, Transvaal, S. Africa. Prof. L. W. T. White, O. Pryce Lewis and applying for nomination by the Council under Bye-law 3(d).

**Curtis: Anthony Henry, B.Arch. (Auck., N.Z.)** (Passed a qualifying Exam. approved by the N.Z.I.A.), 205 South British Building, Shortland Street, Auckland, C.1, New Zealand. H. L. Massey, M. K. Draffin, C. R. Ford.

**English: John Mayne, B.Arch. (C.T.)** (Passed a qualifying Exam. approved by the I.S.A.A.), c/o Messrs. Corrigall, Crickmay and Partners, P.O. Box 971, Lusaka, Northern Rhodesia. Prof. L. W. T. White, O. Pryce Lewis, J. R. Hobson.

**Friendly: Ivor Russell** (Passed a qualifying Exam. approved by the I.S.A.A.), 45 'Albenor' Flats, Beach Road, Sea Point, Cape Town, S. Africa. Prof. L. W. T. White, O. Pryce Lewis, A. H. Honikman.

**Mar: William, B.Arch. (Sydney)** (Passed a qualifying Exam. approved by the R.A.I.A.), 31 Karranga Avenue, Killara, N.S.W., Australia. Prof. H. I. Ashworth, P. J. Gordon, E. L. Thompson.

**Mehta: Harkant Manlal** (Final), 33 Kumar Villas, Mangalwadi, Girgaon, Bombay, 4, India. C. M. Master, M. K. Jadhav, Prof. Claude Batley.

**Patrick: Ian Roy, A.S.T.C.(Arch.)** (Passed a qualifying Exam. approved by the R.A.I.A.), 185 Pitt Street, Sydney, N.S.W., Australia. Samuel Lipson, W. R. Laurie, J. C. Fowll.

**Sargent: John Uley, B.A.(Arch.) (C.T.)** (Passed a qualifying Exam. approved by the I.S.A.A.),

P.O. Box 3585, Cape Town, S. Africa. Prof. L. W. T. White and applying for nomination by the Council under Bye-law 3(d).

**Sethna: Dhunjibhoy Kawasji** (Final), 626 Adenwalla Building, Road No. 8, Parsi Colony, Dadar, Bombay, 14, India. Prof. S. S. Reuben, S. H. Parekar, H. N. Dallas.

**Sethna: Faramarz Bejonji** (Final), 724 Parsi Colony, Dadar, Bombay 14, India. Kumar Ramsinh. Prof. Claude Batley, P. A. d'Avoine.

**Silk: Thomas Eugene, A.S.T.C.(Arch.)** (Passed a qualifying Exam. approved by the R.A.I.A.), 1 Rowlison Parade, Cammeray, N.S.W., Australia. Prof. F. E. Towndrow, Adrian Ashton, P. J. Gordon.

**Wylson: Anthony John, A.A.Dipl. (Arch. Assoc. (London): Sch. of Arch.)**, P.O. Box 5, Causeway, Salisbury, S. Rhodesia. Duncan Wylson, R. F. Jordan, Arthur Korn.

## Obituaries

**Edward Grigg Wylie, C.B.E., M.C. and Bar [F]**, past President of the Glasgow Institute of Architects, died on 31 August, aged 69.

Mr. Wylie served articles with Mr. W. F. MacGibbon [F] and obtained his diploma at Glasgow School of Architecture in 1911. From 1912 until the first world war he was an assistant lecturer in the School. He served in the armed forces during the war and was decorated with the Military Cross and Bar and was made a Chevalier of the Order of the Crown of Rumania. He returned to the School in 1919, becoming an instructor and later Head.

Mr. Wylie meanwhile carried on a vigorous and successful practice in the firm now known as Wylie, Shanks & Wylie. He was the architect of a number of notable buildings in and around Glasgow, including the headquarters of the Scottish Legal Life Assurance Society, Lennox Castle Hospital and various blocks and extensions at Glasgow Royal Infirmary and other hospitals, schools, including Hillhead High School, and new buildings for Glasgow Royal Technical College. Above all, however, his name will always be connected with the Scottish Industrial Estates Ltd., to whom he acted as consultant over a long period. He was also Consultant for Scotland to Shell Mex Ltd.

Besides being a past President of the Glasgow Institute of Architects and representing that body on the Allied Societies Conference, Mr. Wylie was a past member of Council of the Royal Incorporation of Architects in Scotland.

Mr. W. A. P. Jack [F], the President of the Glasgow Institute of Architects, writes of him: 'Always willing to give advice and help to the younger members of his profession, he was ever fair and straightforward. It was fitting that he should be honoured by King George VI by being made a Commander of the British Empire in recognition of his work.'

Mr. A. Graham Henderson, R.S.A., past President, writes:

'I think it would be reasonable to say that one of the major changes which have taken place in architectural practice and the relation of the architect to his client during the last fifty years is the recognition that the architect is not merely a designer but that he must also be the coordinator of all the technicians and others who are associated with building operations. This has partly arisen from the variety of techniques now associated with building, partly from the more thoroughly organised educational system available for architects and also no doubt partly from the stress of economic requirements.'

'Edward G. Wylie was an outstanding example of an architect who early recognised the change which was taking place and, with his natural gifts as a leader and organiser, contributed in a notable degree to effecting the change. My friendship with him extended over nearly fifty years. I remember him first as a student and teacher in the Glasgow School of Architecture, later during the First World War as a soldier, and a very gallant one, where his gifts of leadership were evidenced, and later still when he developed his practice and with numerous competition successes became one of the busiest architects in the country. Perhaps his greatest work of organisation was that which he carried out for Scottish Industrial Estates. This project, which was Government sponsored and financed, was initiated to provide factories suitable for "light" industries in development areas where the preponderance of "heavy" industry tended to create unbalanced labour conditions. The problem was essentially an economic one demanding that buildings should be as low as possible in cost but also demanding that the amenities to the buildings should be of a standard to accord with changing social requirements.'

'Mr. Wylie's contribution to the solution of this problem was acknowledged by Lord Bilsland, the Chairman of Scottish Industrial Estates, as being a major factor in the success of their schemes. In the schemes developed after the war a team of architects was, and still is, employed and his powers of leadership were demonstrated by the success with which he coordinated this team. All who worked with him can pay tribute to the wise guidance which he gave and that in the course of guiding them he never attempted to dominate them.'

'While the work which he did for the Scottish Industrial Estates was financially the largest operation which he controlled, he carried out a large variety of building projects—schools, hospitals, commercial buildings, etc., and all of these showed his thorough grasp of their varied requirements. He was a tremendously hard worker and if he did not spare others he certainly did not spare himself.'

'While I have stressed his technical accomplishments, and these were always outstanding, it is probably true to say that his great success in this field tended to obscure his accomplishments as an artist. His work is in fact of a very high order. While naturally traditional, it was always well conceived and appropriate to its purpose. It tended to show a French influence, particularly in his earlier work, due no doubt to his training under Professor Eugene Bourdon, the first principal of the School of Architecture in Glasgow whose teaching was in the "Beaux-Arts" tradition. His building in Bothwell Street, Glasgow, for the Scottish Legal Assurance Co., to name only one example of his work, is, of its period, a notable piece of street architecture, boldly handled, well proportioned and carefully detailed.'

'Leading such a busy life he had little time for recreation, and with the exception of his more or less regular game of golf, his whole time was taken up with his professional activities. As a friend I found him loyal, unassuming and always willing to give the benefit of his wide experience and sound judgement.'

**Eric Murray, Dipl. Arch. (L'pool) [A]**, died on 11 October 1954, aged 50.

Mr. Murray worked for some years on the architectural staffs of the Corporations of Nottingham and Derby, but was also for a time in the office of Walker and Gillette of New York. His last post was as Regional

Architect in the Department of Health for Scotland.

**George Arthur Ernest Hughes** [L] died on 11 June 1954, aged 81.

Mr. Hughes received his training in the office of Mr. R. Stanger [F] of Wolverhampton and started his own practice in 1912. He practised for many years in Kidderminster and Stourbridge.

## Members' Column

*This column is reserved for notices of changes of address, partnership and partnerships vacant or wanted, practices for sale or wanted, office accommodation, and personal notices other than of posts wanted as salaried assistants for which the Institute's Employment Register is maintained.*

### APPOINTMENTS

**Mr. H. Stanley Smith** [A] has been appointed Staff Architect to Richard Costain Ltd., Building and Civil Engineering Contractors, 111 Westminster Bridge Road, London, S.E.1 (WATERLOO 4977).

### PRACTICES AND PARTNERSHIPS

**Mr. Arthur T. Beer**, B.Arch. [A] has commenced practice at 272 Christchurch Road, Newport, Mon., and will be pleased to receive trade catalogues, etc. (Newport 72316).

**Percy V. Burnett and Partners** of 12 Bloomsbury Square, London, W.C.1, have taken into partnership Mr. Michael S. Hodges [A].

**Mr. James D. Colchester** [L] has, by mutual agreement, withdrawn from the practice of Gooderson and Buckley. The practice will be continued by Mr. Arthur V. Gooderson [L] and Mr. Colin G. Gooderson [A] under its present style of Gooderson and Buckley, 1 Cheyne Court, High Street, Ruislip, Middlesex. **Mr. B. M. Feilden** [A] has started practice on his own at Pulles Ferry, 25 The Close, Norwich, where he will be pleased to receive trade catalogues, etc.

**Mr. E. W. Hayson** [F] has resigned his appointment as Regional Architect with the Ministry of Housing and Local Government and has commenced practice at Solihull. Until completion of his office accommodation in March he will be working from his home address at 168 Station Road, Knowle, Warwickshire (Knowle 2105).

**Mr. John Houghton** [A] has commenced practice at 'Avestan House', 28 Baker Street, Hull, where he will be pleased to receive trade catalogues, etc. (Central 32975).

**Mr. Arthur Lindsay** [A] has resigned his appointment as Architect to the Department of Housing, Accra, and commenced in private practice, c/o P.O. Box 1343, Accra, Gold Coast.

**Mr. Richard J. Nichol** [A] has commenced practice at 3 Ashley Close, Welwyn Garden City, where he will be pleased to receive trade catalogues, etc. (Welwyn Garden 4628).

**Mr. Frederick T. Orman**, T.D. [F], has taken into partnership Mr. Hugh C. S. Workman [A]. The practice will continue as previously under the style of Orman and Partners, 106 High Street, Guildford (67864 and 2403). The Associate practice of Orman and Warren will continue as previously from 7 Gladstone Street, Nicosia, Cyprus, under the direction of Mr. F. J. Damon Warren [A], resident Partner. **Mr. Arthur F. Smith** [L] has commenced practice at 129 Hamilton Avenue, Tolworth, Surrey (ELMbridge 8496).

**Mr. R. G. Sperry** [A] has commenced practice at 169 High Street, Epping, Essex, where he will be pleased to receive trade catalogues, etc.

**Mr. Wycliffe Stutchbury** [A] has entered into partnership with Messrs. Chilton and Waters of Loxfield Chambers, Uckfield, Sussex. The firm is now known as Messrs. Chilton, Waters, and Stutchbury, and continues from the same address and also from Gayles, Friston, Nr. Eastbourne.

**Mr. J. A. N. Whitty** [A] has begun practice under the title of Anthony Whitty, at 9 Enterprise Road, Newlands, Salisbury, Southern Rhodesia, where he will be pleased to receive trade catalogues, etc.

### CHANGES OF ADDRESS

**Mr. L. Mason Apps** [A] has moved his offices from 11 Granada House, Maidstone, to 22a Gabriel's Hill, Maidstone, where he will be pleased to continue receiving trade catalogues, etc. (Maidstone 51589).

**Mr. E. J. Armitage** [A] is returning from India and his address from 1 January 1955 will be 7 Strand-on-the-Green, London, W.4 (CHIswick 0160).

**Mr. Michael J. Bacon** [A] has moved from his London address to 61 Cartier Street, Ottawa, Canada.

**Mr. John W. Ball** [L] has moved his office to 19 Cavendish Square, London, W.1 (L.A.Ngham 4931).

**Mr. J. A. Buck** [A] has changed his address to 82 Mapleford Sweep, Vange, Basildon, Essex.

**Mr. Robert J. Cole** [L] has changed his address to 10 King's Ride, Camberley, Surrey (Camberley 2383).

**Mr. S. P. Dickinson** [A] has moved to 36 Asmuns Hill, London, N.W.11 (MEAdway 2040).

**Mr. B. Ewart Dixon** [F] has changed his address to Spinneys, Pine Grove, Totteridge, London, N.20 (HILlside 3180).

**Mr. Francis A. Kerr** [A] has moved his office from 97 Bridge Street, Manchester, to 134 Deansgate, Manchester, 3.

**Mr. Edward G. Long** [A] has changed his address to 'Tregullow', Daniell Road, Truro, Cornwall.

**Mr. J. G. L. Pouson** [L] has opened a further office at 171 Albert Road, Middlesbrough, which will be run in conjunction with the main Pontefract and London offices, and he will be pleased to receive trade catalogues, etc.

**Mr. Kenneth Reid** [A] has changed his address to 78 Woodfield Road, Leigh-on-Sea, Essex.

**Mr. David A. Rock** [A] has moved to 96 Philbeach Gardens, Earls Court, London, S.W.5, where he will receive all further communications.

**Mr. V. Fletcher Russell** [L] has moved to Roding House, Abridge, Essex, where he will be pleased to receive trade catalogues, etc.

**Mr. Maurice Sanders** [F] has moved his offices to 24 Harley Street, London, W.1, where he will be pleased to receive trade catalogues, etc., after 1 January 1955.

**Mr. S. G. E. and Mrs. E. H. Shipman** [A] have changed their address to 15 Melville Terrace, Stirling (Stirling 2076).

**Mr. C. D. Thompson** [A] has now moved to 2 Belvidere Road, Shrewsbury, Salop.

### PRACTICES AND PARTNERSHIPS WANTED AND AVAILABLE

Licentiate (45) school trained, with some connections for bringing in work, exceptionally well qualified and experienced in the practical side of the profession—A.R.I.C.S., A.M.I.C.E., A.M.T.P.I., London District Surveyors Certificate—seeks partnership in well established London office where his qualifications and experience will be utilised to the full. Small

capital, if required. Box 121, c/o Secretary, R.I.B.A.

Associate seeks partnership. Wide experience all aspects of industrial design, planning and construction. At present controlling contract up to one million pounds at home and abroad with energy and enthusiasm. Some capital available. Box 122, c/o Secretary, R.I.B.A.

Associate (35), school trained, experience with well-known firms in Edinburgh and London and at present lecturer at School of Architecture in London, seeks partnership with firm in the London area, preferably West or West Central. Small capital available. Box 123, c/o Secretary, R.I.B.A.

Associate (32), 11 years' experience, seeks partnership or position leading thereto within 4 miles of London. Capital available if required. Box 124, c/o Secretary, R.I.B.A.

Partnership required in S.W. by Fellow; experienced principal in private practice. Capital available for established and go-ahead firm. Box 126, c/o Secretary, R.I.B.A.

The opportunity occurs for a young architect to acquire a partnership in an established practice in a pleasant South Midlands town. One with good connections in the Midlands desirable. Box 119, c/o Secretary, R.I.B.A.

Associate (30) returning U.K. April 1955, wishes partnership or position leading thereto in Scotland or North England. Varied experience at home and abroad. Some capital available. Box 128, c/o Secretary, R.I.B.A.

Associate (32), Dip.Arch. (Manch.), with wide experience in busy county practice, seeks partnership or position leading thereto in Southern England. Some capital available. Box 129, c/o Secretary, R.I.B.A.

Associate with over 20 years' varied experience U.K. and S. Africa, eight years of own practice, desires form of partnership with progressive firm. Returning to U.K. January 1955. Capital available. Box 130, c/o Secretary, R.I.B.A.

### WANTED AND FOR SALE

Wanted. Surveyor's level required with or without staff; age or condition immaterial. Write Box 127, c/o Secretary, R.I.B.A.

### ACCOMMODATION WANTED

Fellow at present working from home would like to rent a room from an architect with a London office. Share telephone and expenses. Write Box 120, c/o Secretary, R.I.B.A.

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